

PARKHUTIK, P.A., kand.tekhn.nauk; ZAKHAROVA, A.F.

Effect of heat treatment conditions on the characteristics of
Al9 alloy. Avt.prom. no.2:34-36 F '62. (MIRA 15:2)

1. Minskiy avtozavod.
(Aluminum alloys--Heat treatment)

18.1210

39509
S/123/62/000/014/004/020
A004/A101

AUTHORS: Parkhutik, P. A., Zakharova, A. F.

TITLE: The effect of the heat-treatment conditions on the properties of the AL9 (AL9) alloy

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 14, 1962, 22, abstract 14A139 ("Avtomob. prom-st'", 1962, no. 2, 34 - 36)

TEXT: The authors present the results of investigations for cutting down the heat-treatment procedure of the AL9 aluminum alloy on account of a reduction in the holding time prior to hardening and of the ageing time. It is pointed out that optimum mechanical properties of AL9 alloy specimens $\sigma_b = 25 - 27 \text{ kg/mm}^2$, HB 85 - 90 and $\delta = 1.5 - 2.0\%$ are obtained with hardening at 535°C (holding time 4 hours) and ageing at 170 and 185°C (with 4 - 6 and 2 - 4 hours holding). The cast AL9 alloy will harden without quenching. For parts which are of no special importance and which do not require a particular surface finish, the following heat-treatment conditions are recommended: tempering at 170 and 185°C in the course of 6 - 8 and 2 - 4 hours. X

[Abstracter's note: Complete translation]

Card 1/1

S/129/62/000/005/006/011
E073/E535

18.12.10
AUTHORS: Parkhutik, P.A., Candidate of Technical Sciences and
Zakharova, A.E., Engineer

TITLE: Heat treatment of the alloy AJ19 (AL9)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
no.5, 1962, 38-40

TEXT: Standard specimens (200) cast into earthen moulds with various contents of silicon and magnesium (within the limits of the specification ГОСТ (GOST) 1497-42) were investigated for hardness and strength after the following heat treatments (the skin was not machined off): 1) quenching after holding at 535°C for four hours; cooling in water to 60-40°C; ageing at 150, 170, 185 and 200°C for 2, 4, 6 and 8 hours; 2) ageing of specimens in the as-cast states at 150, 170 and 185°C with the same holding times; 3) quenching in water from 535°C after holding for 40, 60, 90, 120 and 180 min; ageing at 170°C for 2, 4, 6 and 8 hours. It was found that tempering at 150°C does not ensure full strengthening of the quenched alloy. The highest strength is achieved after ageing for two hours at 170 and 185°C

Card 1/2

18

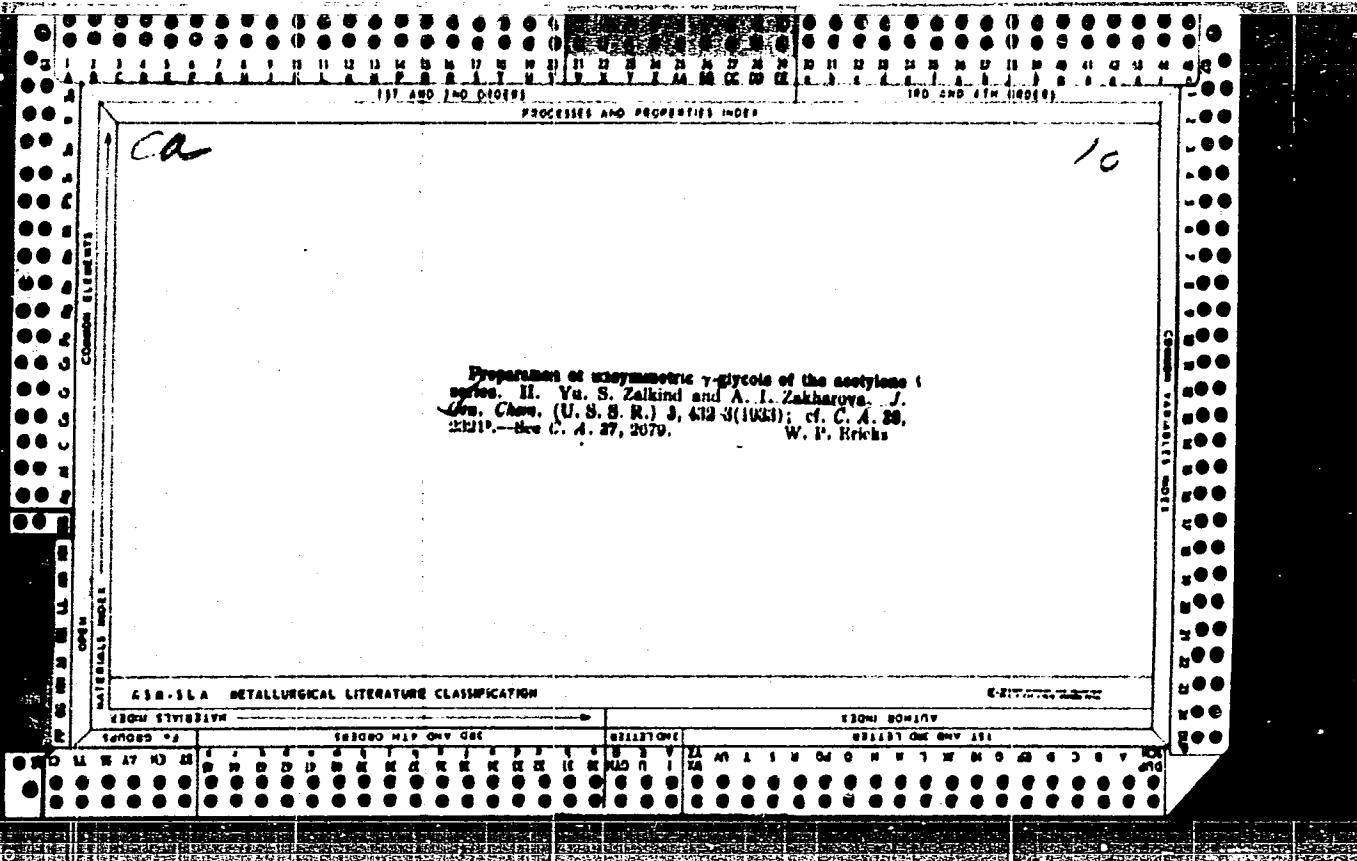
SHELUCHENKO, Valentin Mikhaylovich: Prinimali uchastiye: ZAKHAROVA, A.E.,
dots., kand. tekhn. nauk; ROMANOVSKIY, V.I., kand. tekhn. nauk;
GORYAINSKIY, Yu.V., dots., red.; SANDLER, N.V., red. izd-va;
KOTLYAKOVA, O.I., tekhn. red.

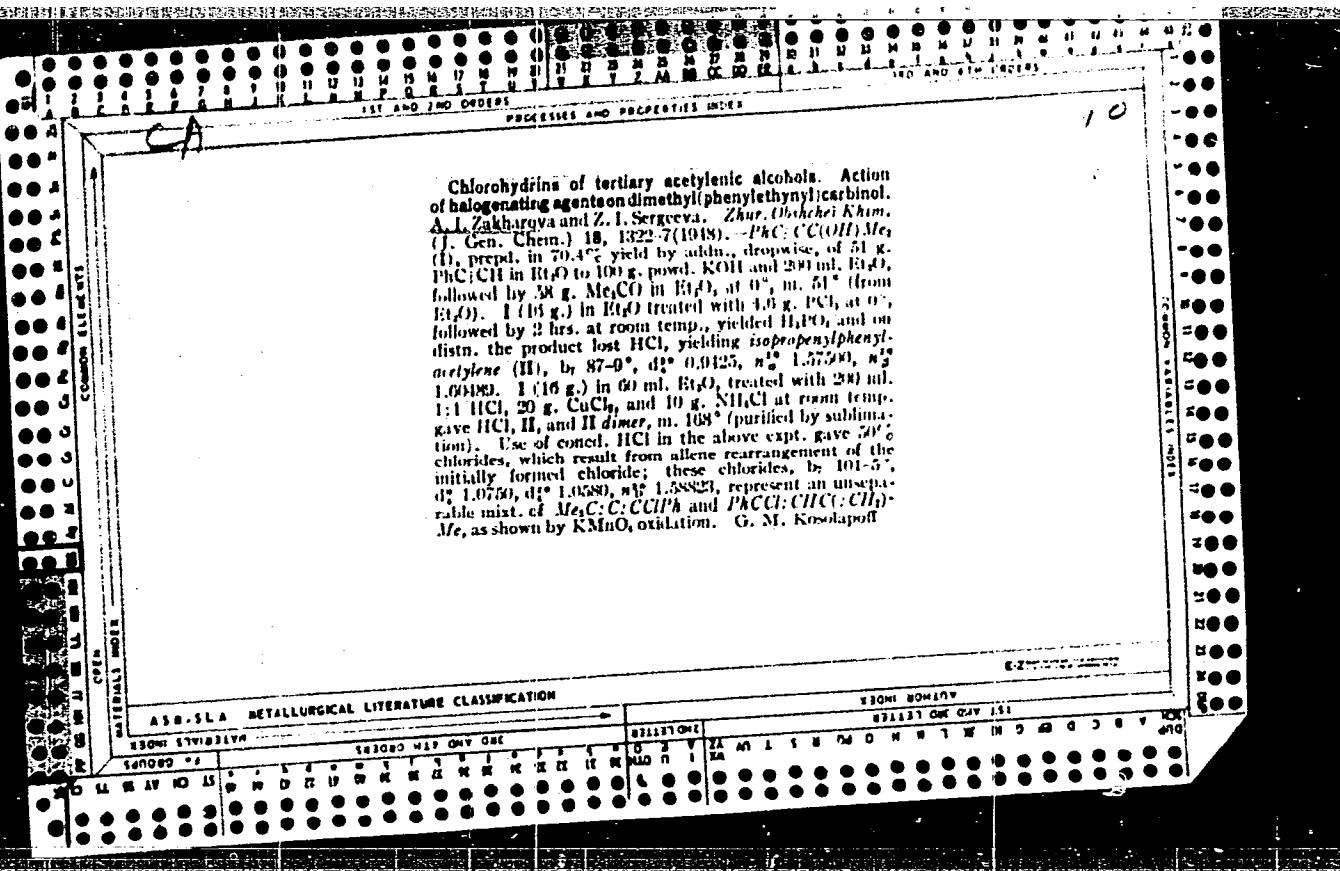
[Shipbuilding materials and ship repairs] Sudostroitel'nye ma-
terialy i sudoremont. Leningrad, Izd-vo "Morskoi transport,"
1961. 332 p. (MIRA 15:3)

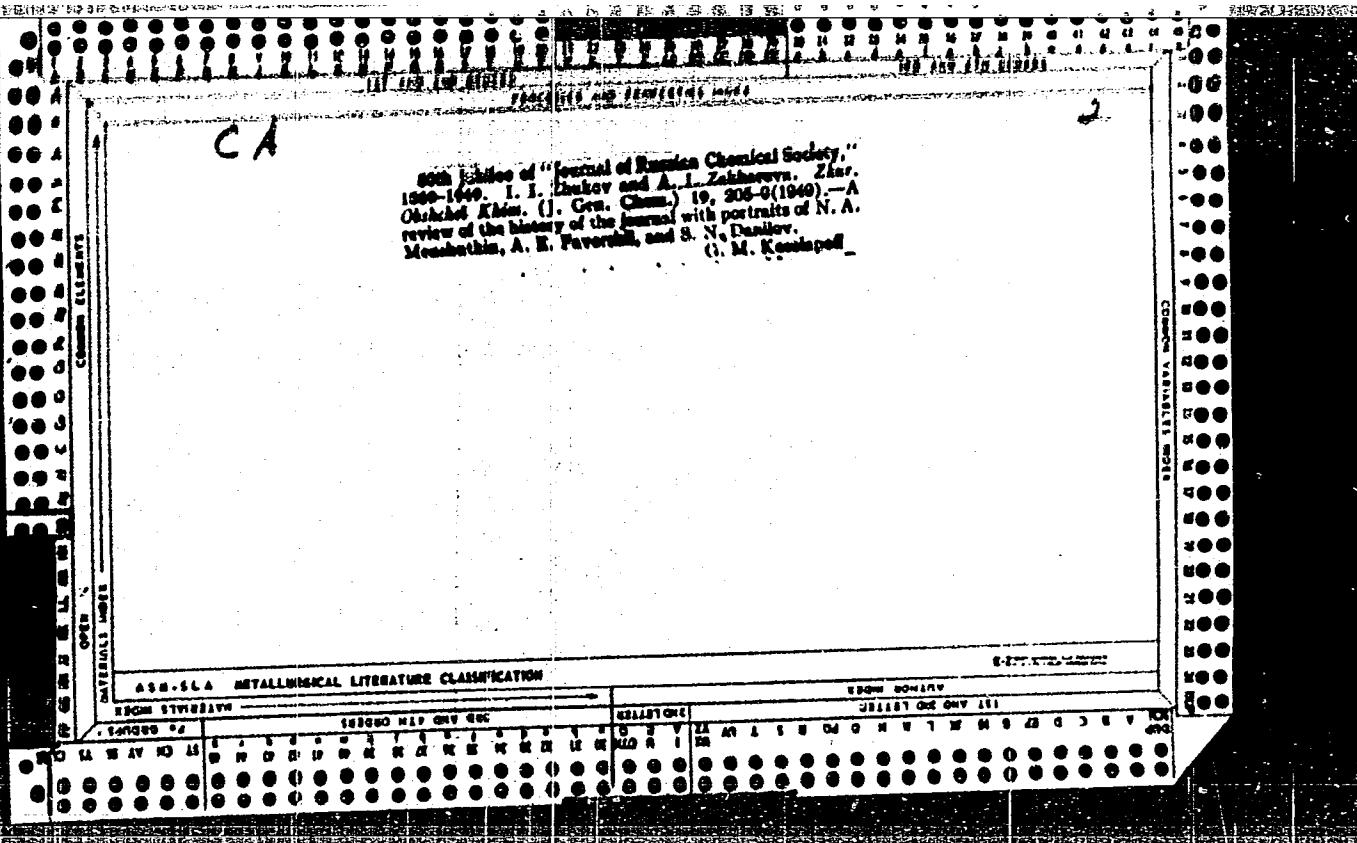
(Shipbuilding--Equipment and supplies)
(Ships--Maintenance and repair)

ZAKHAROVA, A.F., kand. tekhn. nauk, red.; FOMICHEV, A.G., red. izd-va;
GVIRTS, V.L., tekhn. red.

[Small hard-alloy forming cutting tools made of plasticized blanks;
abridged report of lectures delivered in the Leningrad House of Sci-
entific and Technical Propaganda at the "Manufacture of cutting tools"
seminar] Tverdosplavnyi fasonnyi malogabaritnyi instrument iz plasti-
fitsirovannykh zagotovok; sokrashchennaia stenogramma dokladov, pro-
chitannykh v LDNTP na seminare "Instrumental'noe proizvodstvo." Lenin-
grad, 1961. 26 p. (Leningradskii Dom nauchno-tehnicheskoi propagan-
dy. Seriia: Mekhanicheskaya obrabotka metallov) (MIRA 14:7)
(Metal-cutting tools)







PROCESSES AND PROPERTIES INDEX

Cov

Reaction of dimethyl- and methylethylbromoethylcarbinol with hydrogen chloride. A. I. Zakharenko, J. Gen. Chem. (U. S. S. R.) 8, 1224 (1938).—MeC(OH)CBr (I) and MeEtC(OH)CBr (II) were prepd. by the method of Straus, *et al.* (C. A. 25, 71). A mixture of 60 g. I, 10 g. CuCl₂, 3 g. NH₄Cl and 60 ml. of concd. HCl (2 mols. HCl) was stirred at room temp. for 8 hrs. until the pungent odor of I had disappeared. The reaction mixt. was poured into water and the top layer, after washing with water and drying with CaCl₂, was vacuum redistd., giving MeC(Cl)CBr (III) and C₂H₅ClBr, b₅ 62-3°, d₄²⁰ 1.030, n_D²⁰ 1.4215, M. R. a 41.01. The latter compd. appears to be MeCClCH₂BrCl. III, b₅ 48°, d₄²⁰ 1.4551, n_D²⁰ 1.4801, M. R. a 30.01, was identified by hydrolytic decompn. of its ozonide to MeC(OH)CO₂H, m. 70°. Similar treatment of II gave MeEtCCl₂Br, b₅ 65.0°, d₄²⁰ 1.3840, n_D²⁰ 1.4973, M. R. a 41.11. The hydrolytic decompn. of its ozonide gave EtC(OH)MeCO₂H. Thus, the presence of a Br atom in the β -position to the Cl atom in acetylene chlorohydrins excludes the possibility of acetylene-allylne intramol. transposition (cf. Pavorskii and Pavorskaya, C. A. 29, 3031).

Chas. Blane

ASH-SEA METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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124

Isomeric transformations of unsaturated aliphatic halogen compounds. III. The action of hydrochloric acid on methylethylenycarbinal in the presence of ammonium chloride and cuprous chloride. T. A. Favorikaya and A. I. Zakharaeva. *J. Gen. Chem. (U. S. S. R.)* 19, 446-50 (1949); *Tr. T. Ch.* 34, 1300. When 110 g. MeBIC(OH)Cl is allowed to stand for 4 hrs. with 170 cc. concd. HCl , 10 g. CuCl and 6 g. NH_4Cl , it gives a mixt. of 40 g. $\text{1-chloro-1-methyl-1,5-pentadiene}$, b.p. 48-50°, $d_4^{20} 0.9141$, n_D²⁰ 1.4203, MR 33.01, and 18 g. $\text{1-chloro-1-methyl-1,3-pentadiene}$ (I), b.p. 68-70°, $d_4^{20} 0.9502$, n_D²⁰ 1.46167, MR 34.44. When I is allowed to stand 8 months with CuCl_2 and HCl , it is converted into $\text{1-chloro-1-methyl-1,5-pentadiene}$, b.p. 62-3°, $d_4^{20} 0.9574$, n_D²⁰ 1.47714, MR 34.40. This reacts with maleic anhydride to give a mixt. from which, after hydrolysis, 2 acids, m. 218-20° and 350-1°, are obtained. All these reactions are analogous to those of MeCCIC(Ch) , but go more slowly. IV. The action of hydrochloric acid on diethyl-ethylenycarbinal in the presence of cuprous or cupric chloride and ammonium chloride. T. A. Favorikaya and I. A. Favorikaya. *Izdat. Akad. Nauk SSSR* 451 (8). Et_2CO and $\text{C}_2\text{H}_5\text{I}$ in the presence of pure KOH give 70-80% $\text{Et}_2\text{C(Ch)Cl(Ch)}$ (II), b. 136-7°, $d_4^{20} 0.8748$, $d_4^{10} 0.8779$, $d_4^{20} 0.8800$, n_D²⁰ 1.4385, n_D²⁰ 1.440097, MR_D 33.58, MR_A 31.01; phenyl-ethanone, m. 32-3°. At the same time, 10% tetrethyl-

butynediol is always formed. When I reacts with HCl, either alone or in the presence of CuCl and NH₄Cl, it forms 70% 3-ethyl-1-chloro-1-pentene (III), b.p. 73-75°, $d_4^{20} 0.9230$, $n_{D}^{20} 1.43372$, $n_{D}^{25} 1.43384$, MR. 37.51, MR. 37.88. If a mixt. of CuCl and NH₄Cl is used as a catalyst, a mixt. of II and 3-ethyl-1-chloro-1,2-pentadiene (III), b.p. 83-87°, $d_4^{20} 0.9297$, $d_4^{25} 0.9329$, $d_4^{30} 0.9302$, $n_{D}^{20} 1.47036$, $n_{D}^{25} 1.48131$, MR. 39.10, MR. 40.11, is obtained. The amt. of III in the mixt. gradually increases with time of stirring, but reaches a max. of 25-30% which is not exceeded even if the mixt. is stirred more than 8 hrs. II is partly converted to III when it is stirred with HCl and CuCl-NH₄Cl, but if the HCl is absent, no isomerization occurs. Isomerization to a conjugated diene never occurs. The CuCl dissolves to form a complex acid which is the true catalyst. The reactions of these compds. are all much slower than those of the corresponding di-Me derivs. II easily loses HCl to form 3-ethyl-1-penten-1-yne (IV), b.p. 41-3°, $d_4^{20} 0.7730$, $n_{D}^{20} 1.43062$, $n_{D}^{25} 1.45224$, MR. 31.7, MR. 32.9. Some IV is always formed during isomerization of II to III. When IV is hydrated, it forms MeCl₂ CRICOME which reacts with NO₂CH₂NHNH₂ to give a pyrazolone, m. 105-6°. Hydrolysis of II with an aq. suspension of CaCO₃ gives a mixt. of I and IV. When III is hydrolyzed under these conditions, it isomerizes to II which then forms I and IV. **V. Reactions of dimethyl-**

SEE OTHER SIDE

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ethynylcarbaliol with hydrogen bromide and hydrogen iodide. T. A. Pavorskaya, *Ibid.* 401, 7. When MeC_2 (OHC) CH_2 and HBr react, no matter how the reaction conditions are varied, the only product is 3-methyl-1-bromo-1,3-butadiene (I), bp 48°, d₂²⁰ 1.3149, d₄²⁰ 1.3106, d₂¹⁰ 1.3108, n_D²⁰ 1.5301, MR 33.01. Thus, the reaction goes rapidly and completely to the final product, instead of going through the series of intermediate isomerizations found with the analogous chloride. With maleic anhydride, I gives the same compds. obtained from the chloride. When III is used, the product is a liquid, bp 48.0°, which decomps. very easily and cannot be sepd. by distn. Its decomp. products indicate that it is a mixt. of MeC_2 -oxidation products, indicate that it is a mixt. of MeC_2 - CCH_2 and $\text{CH}_2=\text{CMeCH}_2\text{CCH}_3$. H. M. Leekster

Ca

Polymerization of hydrocarbons C_6H_{10} with conjugated double and triple bonds. II. Cyclic dimerization of isopropenylbenzenes. A. I. Zakhарова and V. A. Белозерова. *J. Russ. Chem. (U.S.S.R.)* 18, 67-9 (1941); cf. Favorkii and Z., C. A. 31, 5318. — The present work deals with dimerization of the nearest homolog of vinylacetylene, *isopropenylacetylene* (I). I, prep'd. by dehydration of $MeC(OH)C_2H_3$ by boiling with 30% H_2SO_4 , b. 31-3°. I (30 g.) and 210 g. MeOH, heated in sealed tubes for 12 hrs. at 120°, upon washing with H_2O and steam distill., gave 0.9 g. of original I, 3 g. of a substance b. 72-74° (III) (18%), and a resin which formed during the steam distill. II has d_4^{20} 0.9113, d_4^{25} 0.9070, n_4^{20} 1.49273, n_4^{25} 1.51453. Mol. wt. deems and analysis show that the product is a dimer of I. In order to prove its structure it was oxidized as follows: 2 g. II and 150 cc. 2% KOH were treated at water-bath temp. with 20 g. dry K_2MnO_4 , added slowly: the oxidation required 18 hrs. After the usual working-up, the product isolated was an insol. acid, m. 347-8°. This was identified as isophthalic acid by conversion into the Me ester, m. 67-8°, and comparison with an authentic sample of the latter. II does not react with NH_3 , $CuCl$. It is therefore considered as established that II is 1-methyl-3-isopropenylbenzene.

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The polymerization of C_6H_{10} hydrocarbons with neighboring double and triple bonds. A. E. Favarski and A. I. Zakharyan. *J. Russ. Chem. (U. S. S. R.)* 71, 673-6 (1957); *cf.* *C. A.* 51, 661. — 3-Methyl-1-penten-1- α was heated at 120° for 12 hrs. in a sealed tube with $MeOH$ or $HOAc$ as catalyst and gave 50% of dimer. $KMnO_4$ oxidized this to 1,2,4-C₁₀H₁₆(CO₂H)₃, 3,3,4-C₁₀H₁₆(CO₂H)₃, and $HOAc$. This showed that the dimer was 1,4-pseudobutylene-3,3-dimethylbenzene. In K_2CO_3 , 1.0 M₂, 64°, 1,3125. H. M. Lester

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963610008-7"

Clay

Characteristics of hydrocarbons of the $C_{M_{1-3}}$ series with conjugated double and triple linkages. A. N. Zakhareva. *Sov. Rept. Leningrad. Inst. Tekhn. No. 3, 162-46 (1956).* MeLiCO is added gradually to a suspension of KOH in Me_2CO and, with C_6H_6 at $\sim 10^\circ$, C_6H_6 is passed for 8 hrs. and H_2O is added; when $HOCMe-C(CH_3)_2$ is obtained in 70% yield. This gives $CHMe-CMe-C(CH_3)_2$ (I) when passed over $MgSO_4$ at 230° . I and KOH in Me_2CO (120° ; 12 hrs.) give 2-methoxy-3-methyl- α,β -pentadiene (II), $b_p 46.0^\circ$, converted by heating with 1% H_2SO_4 ($25-30^\circ$; 8 hrs.) into $CHMe-CMe-CO_2Me$, and by O_3 in $CHCl_3$ into $MeCHO$, $AcCO_2Me$ and HCO_2H . I and KOH in $EtOH$ yield similarly 2-ethoxy-3-methyl- α,β -pentadiene (III), $b_p 54-57^\circ$, which reacts analogously to I with 1% H_2SO_4 and gives 2-ethoxy-3-methylpentane, $b_p 140-2^\circ$, on hydrogenation (Pd-Ni). A dimer of I, $b_p 74-81^\circ$, is obtained as a by-product of the prepn. of II or III; it yields Et_2CO , MeLiCO and AcOH with $KMnO_4$ and is probably $(CMeLiC(C_2))_2$. B. C. A.

AIA-11A METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED

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USSR/Chemistry - Alcohols, Acetylenic, Chlorhydrine of
Chemistry - Halogenation Jul 48

"The Problem of Obtaining Chlorhydrine of Tertiary
Acetylene Alcohols, by Means of the Action of
Halogenizing Agents on Dimethyl-Phenyl-Acetylenyl-
Carbinol," A. I. Zalbarova, Z. I. Sergejev, Chair
of Org Chem, Chem Faculty, Leningrad State Order of
Lenin U, 44 pp

"Zhur Obshch Khim" Vol XVIII (1944), No 7

Studies action of halogenizing agents on dimethyl-
phenylacetylenyl-carbinol (I). When I is treated

9/49236

USSR/Chemistry - Alcohols, Acetylenic, Jul 48
Chlorhydrine of (Contd)

with phosphorus trichloride or dry hydrogen
chloride, chlorhydrin carbinol is formed but it is
very unstable and decomposes on heating. When I
is treated with dilute hydrochloric acid in pres-
ence of CuCl₂ and NH₄Cl, isopropenylphenylacetyl-
ene and a substance with formula C₂₂H₂₀ are
formed. When I is treated with concentrated
hydrochloric acid in the presence of CuCl₂ and
NH₄Cl, the main reaction product is a mixture of
chlorides. Submitted 20 Apr 1947.

9/49236

CA

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*Preparation of methyl-*tert*-butylacetylene.* A. I. Zaks, I. A. Barova (A. A. Zhilov State Univ., Leningrad). *Zhur. Obshch. Khim.* (U. S. S. R.) **20**, 1572-81 (1950). — Authentic $MeC(C_2H_5)_3$ was prep'd. as follows: *tert*-Butyl- C_2H_5 was prep'd. according to Ivitsik (J. A. I., 18, 1970) with $NaOH$ as solvent; stirring at 20 - 30° gave an 80% yield. The hydrocarbon treated with Na and under RuO_4 readily gave the Na dene, which was treated with cooling with Me_2SO_4 , then heated 2 hrs., yielding 60% $MeC(C_2H_5)_3$, b. $82-83^\circ$, $d_4^{20} 0.7343$, $d_4^{15} 0.7161$, $\eta_1^0 1.4051$, $\eta_2^{20} 1.4430$, $\eta_2^{15} 1.4113$ (the properties are compared with numerous previous preps.; 10 references). Oxidation with 1% $KMnO_4$ gave $Me_2C(CO_2H)_2$ and $AcOH$, which were also obtained on ozonolysis. The Raman spectrum showed a line at 2243.1 cm.^{-1} characteristic of the C:C link. The product is stable and is unchanged on long storage or on heating with alc. $NaOH$. G. M. Kusalapoff

CA

3

Raman spectra of acetylenic hydrocarbons. A. I. Zakhareva (Leningrad State Univ.), *Zhur. Obshch. Khim.* (J. Gen. Chem.) 21, 493-4(1951).—MeCC(C)CH (from pinacolin), b. $\beta\beta$ -40°, d_1^2 0.0741, π_1^2 1.37721, showed the Raman lines (intensities on a b -scale) 2136(1), 2105(5), 2030(0.5), 2014(0.5), 1823(0.5), 1451(4), 1205(3), 1022(0.5), 929(3), 887(2), 701(4), 87(2), 643(1), 362(0.5), 103(5). The frequency 2105 cm^{-1} corresponds to the triple bond. The lines 1205 and 1451 are characteristic of terminal branching and of Me groups, resp. N. I. Tikhonov

1951

ZAKHAROVA, A.I.; SAPOZHNIKOVA, R.A.

Intramolecular rearrangements in the acetylene series, VII. Reaction of an acetylenic chloride, 2,3,3-trimethyl-3-chloro-4-hexyne, with organomagnesium compounds. Zhur. Obshchey Khim. 22,1804-10 '52.
(CA 47 no.14:6857 '53) (MLR 5:11)

1. Leningrad State Univ.

CA 10
Intramolecular rearrangements in acetylene series. VI.
Preparation of methyl-*tert*-butyl(methylthiyl)carbinol and its reaction with hydrogen chloride. Reaction of 2,2,3-trimethyl-3-chloro-4-hexyne with silver acetate. A. I. Zakharova and K. N. Dobromyslova (A. Zhdanov State Univ., Leningrad). *Zhur. Obshchel Khim.* (J. Gen. Chem.) 20, 2029-37 (1950); cf. C.I. 43, 6153c; 44, 1001a. Passage of MeC_2CH through 400 ml. Et_2O and 200 g. powd. KOH at 0° with addition of 110 g. MeC_2Ca in Et_2O gave, after standing overnight, 65% $\text{MeCCMe(OH)C}_2\text{CH}$ (I), b_1 68°, d_2^2 0.8046, d_4^2 0.8707, n_D^{20} 1.45261, n_D^{25} 1.45988, n_D^{30} 1.45881 (cf. Iotisch, *J. Russ. Phys. Chem. Soc.* 41, 540 (1909)). Treatment of 25 g. I with 4-5 g. portions of dry HCl gave a spontaneous temp. rise to 70-80°, yielding 2,2,3-trimethyl-3-chloro-4-hexyne (II), b_1 50-7°, m. 21°, d_2^2 0.9275, d_4^2 0.9251, n_D^{20} 1.46310, n_D^{25} 1.46033, n_D^{30} 1.46099; this with 1% alk. KMnO_4 at 50° gave $\text{Me}_2\text{C}_2\text{O}_4$ and AcOH . Stirring 16 g. II with 17 g. AgOAc in AcOH 1 hrs. at 60° gave 63% 2,2,3-trimethyl-3-acetoxy-4-hexyne (III), b_1 63°, d_2^2 0.9321, d_4^2 0.9144, n_D^{20} 1.44008, n_D^{25} 1.45128. Redistilling 8 g. I with 40 g. Ac_2O 8 hrs. gave an acetate closely similar to III, b_1 62-3°, d_2^2 0.9315, d_4^2 0.9138. Formation of the III from I proceeds by a monomeric mechanism, as shown by the ease of replacement caused by the inductive effect of the Me group. G. M. Kosolapoff

ZAKHAROVA, A. I.

PA 2/50T26

USSR/Chemistry - Acetylene Series

Rearrangements, Intermolecular

Jul 49

"Intermolecular Rearrangements in the Acetylene Series: V. Interaction of Acetylene Chloride - 3-Chloro-3-Methylhexyn-4 With Magnesium Organic Compounds" A. I. Zakhарова, Chair of Org. Chem., Chem. Faculty Leningrad Ord. of Lenin State U

Inst. A. A. Zhanov, 5 1/4 pp

"Zhur. Obshch. Khim." Vol. XIX, No. 7

Reaction of initial compound with C_2H_5MgBr is accompanied by an intermolecular rearrangement, as a result of which are produced 3,5-dimethylheptadiene-3,4 and 3-methyl-3-ethylhexyn-4.

USSR/Chemistry - Acetylene Series (Contd) 2/50T26

Rearrangements, Intermolecular

Jul 49

Anomalous product, 3-methyl-5-phenyl-hexadiene-3,4, results from reaction of C_6H_5MgBr with initial compound. Discusses possible mechanism of these reactions. Submitted 7 Mar 48.

2/50T26

ZAKHAROVA, A. I.

58/49T13

USSR/Chemistry - Acetylene
Chemistry - Rearrangements Intramolecular

"Intramolecular Rearrangements in the Acetylene
Series: IV, Interaction of 3-Chloro-3-Methyl-
1-Pentyne and 3-Chloro-3-Methyl-1-4-Hexene With
Silver Acetate," A. I. Zakharova, Chair of
Org Chem, Chem Faculty, Leningrad State Ord
of Lenin U imeni A. A. Zhdanov, 8 1/2 pp

"Zhur Obshch Khim" Vol XIX, No 1

Interaction of tertiary acetylene chlorides
with silver acetate in glacial acetic acid
gives acetates of the initial alcohols from

58/49T13

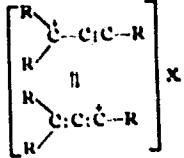
USSR/Chemistry - Acetylene (Contd) Jan 49

which the chlorides were prepared, an unstable
allene acetate, formed by intramolecular re-
arrangement, and an olefinic diacetate. This
course of the reactions was demonstrated on
subject compounds. Methylmethyl-methylacetylenyl-
carbinol was prepared from methylacetylene and
methyl ethyl ketone and converted into the cor-
responding chlorid² by reaction with phosphorus
trichloride or gaseous hydrogen chloride. This
reaction is accompanied by partial dehydration,
forming 3-methyl-1-2-hexene-4-yne bp 107 - 108°
at 737 mm, d_{20/4} 0.7785, n_{20/D} 1.4507.

Submitted 20 APR 47.

58/49T13

10
 CA
 Intramolecular rearrangements in the acetylene series.
 III. Reaction of an acetylene chloride, 2-chloro-2-methyl-3-pentyne, with organo-magnesium compounds.
 A. I. Zakhareva, Leningrad State Univ., J. Gen. Chem. (U.S.S.R.) 17, 1277-85 (1947) (in Russian); cf. C.A. 42, 18717.— MeMgBr (from 10 g. Mg and 52 g. MeBr) in 200 cc. Et_2O was decanted from unused Mg and the soln. slowly treated with 40 g. $\text{Me}_2\text{CClC}_2\text{CMe}$; after 6 hrs. at 60° the mixt. was decompr. with dil. HCl and the org. layer gave 60% $\text{tetrachloropallene}$, b. 82°-4°, d_2^{20} 0.7311, d_2^{25} 0.7100, n_D^{20} 1.4202. A similar reaction using PhMgBr (from 8 g. Mg and 50 g. PhBr) gave trimethyl-phenylalene (40%), b.p. 108-8°, d_2^{20} 0.9400, d_2^{25} 0.9302, n_D^{20} 1.54133, n_D^{25} 1.55337, n_D^{20} 1.54703. The products in both cases are thus anomalous and result from a rearrangement, probably taking place intramolecularly at the moment of reaction. Under the reaction conditions, a bound resonating carbonium ion,



is formed. Its reaction with RMgX data, the formation of either the alene or the acetylene type products.
 (1) M. Kowalewoff

ASSISTANT METALLURGICAL LITERATURE CLASSIFICATION

62-10000-243-27

Intramolecular rearrangements of compounds in the acetylene series. II. Reaction of an acetylide chloride (2-chloro-2-methyl-3-pentyne) with silver acetate. A. I. Zakharova (Leningrad State Univ.), *J. Russ. Chem. (USSR)* 17, 681 (1917) (in Russian); *cf. C.A. 40, 4654*.—Powd. KOH (200 g.) and 400 cc. abs. Rt_2O were satd. with stirring at 0° with MeC_2CH and the mixt. was treated with 87 g. Me_2CO in 300 cc. Rt_2O with continued addition of MeC_2CH (total used 22-4 g.). The mixt. was decomposed with ice water and the dried org. layer gave on distn. 45% $\text{Me}_2\text{C}(\text{OH})\text{C}_2\text{CH}_3$ (I), bp. 80-1°, d_2^{20} 0.8000, d_4^{20} 0.881, μ_2^D 1.44402, μ_3^D 1.44486 (these values agree with those of Iosifovich (*J. Russ. Phys. Chem. Soc.* 39, 651 (1907)), but differ from those of Hund and Cohen (*C.A. 23, 1814*). Prepn. of I by the method of H. and C. gave a product identical with I: to RtMgBr , from 30 g. Mg and 100 g. Rt_2O , in 750 cc. Rt_2O was added dry MeC_2CH over 10 hrs., and the product was treated at 0° with stirring with 87 g. Me_2CO , allowed to stand 3 days, and treated with ice, then with dil. HCl, to give on distn. a little $\text{CH}_2\text{CMeC}_2\text{CH}_3$, 45% I, bp. 81-2°, μ_2^D 1.44395, and a small amt. of a substance, bp. 63-77°, which failed to show the presence of either OH or CO groups, and which was apparently mistakenly assigned to the structure of I by H. and C. I (40 g.) was treated with HCl generated by heating concd. HCl (without drying) without cooling; at first, HCl was absorbed with spontaneous temp. rise, then at 70-5° a vigorous reaction took place and 2 layers formed (generally 20-30 min. sufficed to complete the reaction) and, on cooling, the upper layer, after drying, was distd. to yield 70% 2-Alko-3-methyl-3-heptyne (II), bp. 81-2°, d_2^{20} 0.9472, d_4^{20} 0.9307, d_3^{20} 0.9281, μ_2^D 1.44913, μ_3^D 1.45118, and a small amt. of $\text{CH}_2\text{CMeC}_2\text{CH}_3$, bp. 75-0°. Confirmation of the structure of II by ozonization gave AcOH and chloroacetylacrylic acid (analyzed as the Ca salt). It is noteworthy that II differs in its consts. from the product assigned the same

structure by H. and C. (see above). I (13 g.) and 75 g. Ac_2O were heated on a sand bath 6 hrs., dilid. with H_2O , and the org. layer sepd., washed, dried, and distd. to give only $\text{Me}_2\text{C}(\text{OAc})\text{C}_2\text{CH}_3$, bp. 103-2°, bp. 81-2°, d_2^{20} 0.9581, d_4^{20} 0.9485, d_3^{20} 0.9380, μ_2^D 1.43707. The same product was obtained when 42 g. AgOAc in 50 cc. AcOH was treated over 0.5 hr. with stirring with 20 g. II in 25 cc. AcOH , then heated 4 hrs. to 0°, dilid. with water, neutralized with 10% Na_2CO_3 , extd. with Et_2O , and distd. When the latter expt. was repeated using $\text{Pb}(\text{OAc})_4$, the same result was obtained. No acetate of the alene structure was detected. G. M. Kondapoff

AND TWO CROPS
PRICESIES AND PROPERTIES UNDER

Intramolecular rearrangements in the acetylene series.
 1. Reaction of 3-chloro-3-methyl-1-butynyl with silver acetate, (A. L. Zaitseva, (Leningrad State Univ.), *J. Gen. Chem. (USSR)*, 19, 459-57 (1949) (English summary).—Acetylene (3 g.) and 25 cc. AcOH were treated with vigorous stirring, with 25 g. $\text{MeCOCl} \cdot \text{CHI}$ in 25 cc. AcOEt ; after stirring for 4 hrs. at 60° the mixt. was treated with water, neutralized by NaCO_3 , and dried. with Bz_2O . Distn. gave a mixt. from which the following products were isolated: 3-methyl-3-acetyloxy-1-butynyl, $\text{b.p. } 90-70^\circ$, $\text{d}^2 0.9303$, $d_4^0 0.93504$, $n_{25}^{20} 1.44140$, $\text{b.p. } 457^\circ$ (hydrogenation over Pt black gave diacetoxymethylbenzyl acetate); b, 124-5°, $d_4^0 0.9300$; 3-methyl-3-acetyloxy-1,3-butadiene, $\text{b.p. } 73-4^\circ$, $d_4^0 0.9784$, $d_4^0 0.9357$, $n_{25}^{20} 1.45793$, $n_D^0 1.40458$ (hydrogenation as above gave iso-Am-OAc); and 3-methyl-1,3-diacetoxyl-2-butene, $\text{b.p. } 155-17^\circ$, $\text{b.p. } 94-5^\circ$, $d_4^0 1.0500$, $d_4^0 1.0482$, $n_{25}^{20} 1.43357$, $n_D^0 1.45174$ (oxidation gave Me-CO_2 , AcOH and $\text{AcOCl} \cdot \text{CO}_2\text{H}$), while hydrogenation as above gave iso-PrCH(OAc) CH_2OAc , which on hydrolysis by MeOH-HCl yielded iso-PrCOMe by a secondary rearrangement. If KOAc is used in the above reaction no action occurs at 60°, while increased temp. leads to a secondary reaction with formation of $\text{CH}_2\text{Cl-CeI}_3\text{CH}$ besides the normally expected acetate. Substitution of Bz_2O for AcOH gives only the normal substitution product, the acetylenic acetate.

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ASA-31A METALLURICAL LITERATURE CLASSIFICATION

6-27-1962

APPROVED FOR RELEASE: 09/19/2001

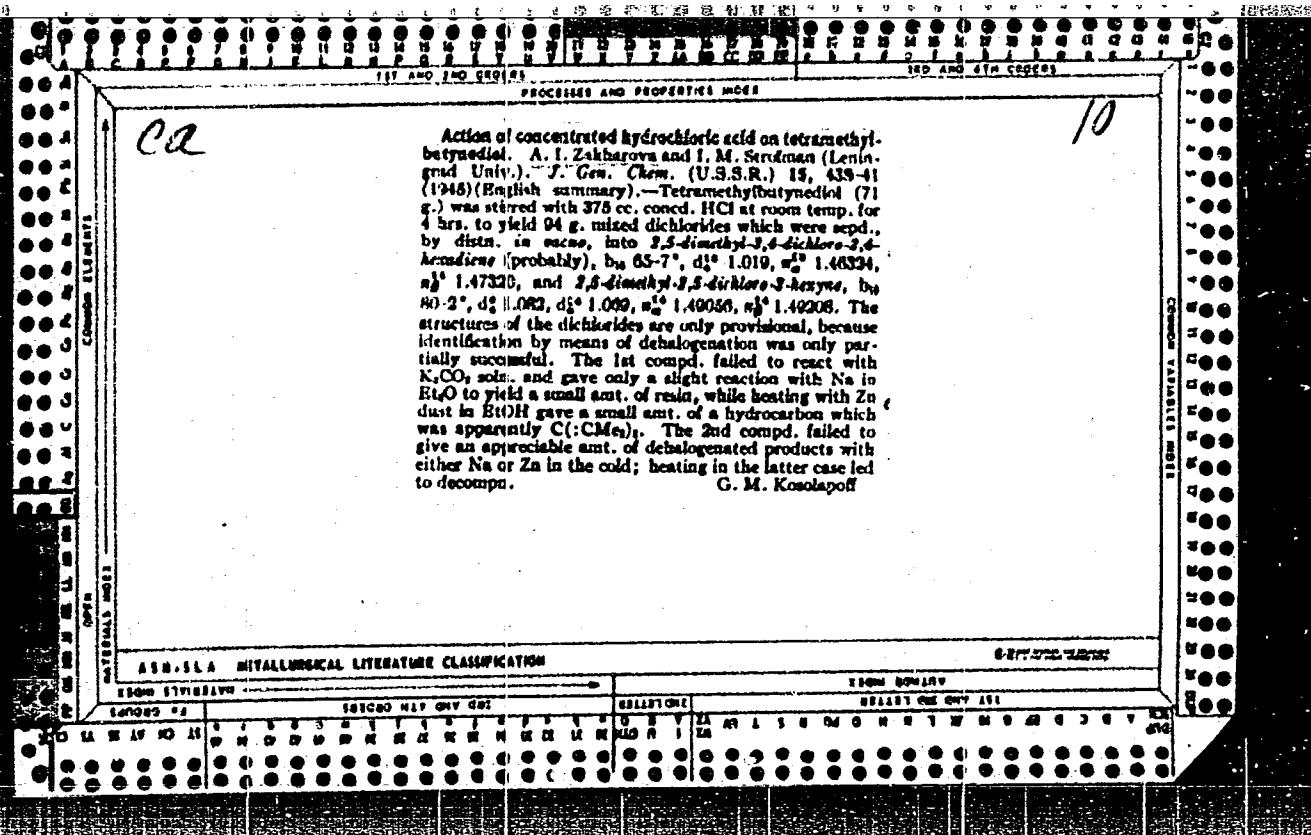
CIA-RDP86-00513R001963610008-7"

ZAKHAROVA, A. I.

The action of concentrated hydrochloric acid on tetra-methylbutynediol. II. A. I. Zakharova and G. D. Il'ina (Leningrad State Univ.). *Zhur. Obrabotki Khim.* 24, 2144-9 (1984); cf. *C.A.* 100, 43494. Passage of CuH_2 with ice cooling into 30% g. concd. KOH in dry Et_2O and addn. of 87 g. Me_2CO , further addn. of C_6H_6 and addn. of 87 g. more Me_2CO and allowing the mixt. to stand 48 hrs. gave upon treatment with H_2O 80% ($\text{Me}_2\text{C}(\text{OH})\text{Cl}$), m. 05-7°. This (224 g.) stirred 4 hrs. with 1.6 l. concd. HCl with cooling gave 20.4% 2,5-dimethyl-3-hexyne, m. 25-0°, n_D^{20} 1.4613, δ 1.0118, m.p. 65-7°, and 54.4% 3,4-dimethyl-2,5-dimethyl-2-hexadiene, m.p. 80-2°, n_D^{20} 1.4940, δ 1.0550. These were identified by Raman spectra. G. M. K.

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①



AUTHORS:

Zakharova, A. I., Il'ina, G. D.

79-12-6/43

TITLE:

The Synthesis of Ramified Triacetylene Hydrocarbons (Sintez razvetykh vlennykh triatsetilenovykh uglevodorodov).
II. Production of 4,4,7,7-Tetramethyl-Decatriine-2,5,8 and 3,3,6,6-Tetramethyl-1,8-Diphenyl-Octatriine-1,4,7 (II. Polucheniye 4,4,7,7-tetrametil-dekatriina-2,5,8, i. 3,3,6,6-tetrametil-1,8-difenil-oktatriina-1,4,7).

PERIODICAL:

Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 12, pp. 3201-3203 (USSR).

ABSTRACT:

In a previous work the authors proposed a method for the synthesis of triacetylene hydrocarbons with a β -position of the triple bindings, by means of the propargylation of magnesium bromalkine-1 with the help of tertiary acetylenedichlorides ($R_2C\text{Cl}-C\equiv C-C\text{Cl}R_2$).

This way the first representative of the completely β -triines was obtained. In the present work the authors continue the investigation of the synthesis and properties of ramified triacetylene with a β -position of the triple bindings and describe the synthesis of two new representatives of this class. By means of propargylation of the magnesium bromalkine with tertiary acetylene-dichloride the synthesis of two new ramified diacetylene hydrocarbons of the following formula was then carried out:

Card 1/2

The Synthesis of Ramified Triacetylene Hydrocarbons.
II. Production of 4,4,7,7-Tetramethyl-Decatriine-2,5,8 and 3,3,6,6-Tetramethyl-1,
8-Diphenyl-Octatriine-1,4,7. 79-12-6/43

a) 4,4,7-tetramethyl-decatriine-2,5,8; b) 3,3,6,6-tetramethyl-1,8-diphenyl-octatriine-1,4,7. The structure of these hydrocarbons was proved by the fact that on the occasion of the ozonization acetic acid and corresponding dimethyl malonic acid formed. There are 6 references, 3 of which are Slavic.

ASSOCIATION: Leningrad Agricultural Institute (Leningradskiy sel'skokhozyaystvennyy institut).

SUBMITTED: November 20, 1956.

AVAILABLE: Library of Congress.

1. Triacetylene Hydrocarbons - Synthesis

Card 2/2

APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001963610008-7"

ZAKHAROVA, A. I.

Synthesis of branched diacetylenic hydrocarbons. Preparation of 2,2,5,5,8,8-hexamethyl-3,6-nonadiyne. A. I. Zakharova and G. M. Kosolapoff (Leningrad State University). Zhur. obshch. Khim. 25, 1453-4 (1957); cf. U.S. 49, 87834.

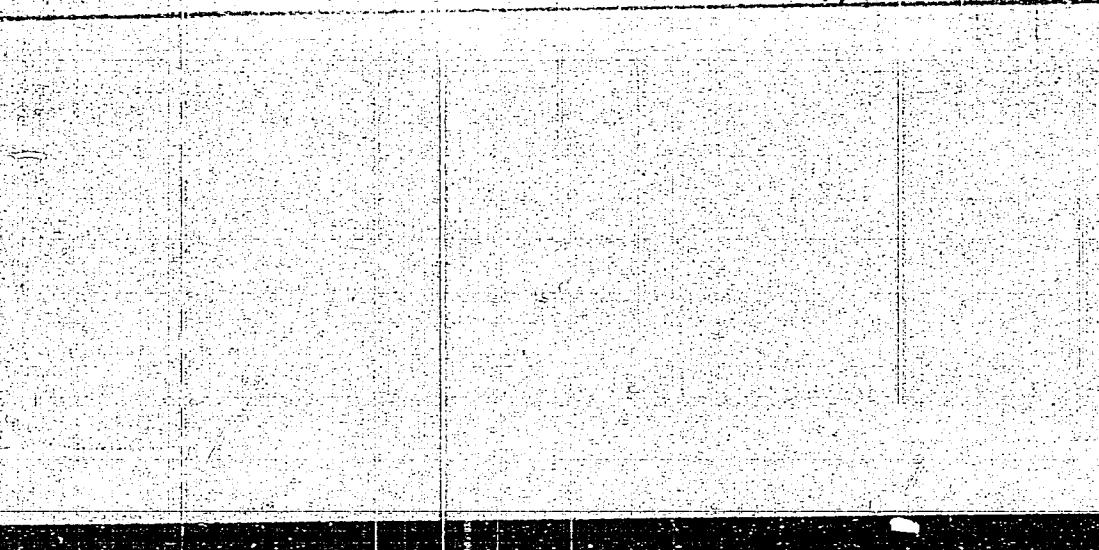
Branched acetylenic hydrocarbons can be prep'd. by propargylation of acetylenic Grignard reagents by compds. of the type R_3CClC_2CR in the presence of $HgCl_2$ and $CuCl_2$. To 150 g. powd. KOH in 200 ml. dry Et_2O was added, with good stirring at 0° in 4 hrs., 0.5 mole $Me_3CC:CH$, 0.5 mole Me_2CO , and 60 ml. dry Et_2O ; after stirring 12 hrs. the mixt. was treated with H_2O with cooling and the org. layer yielded 88.0% $Me_3CC:CCMe_2OH$, bp 52°, bp 62°, m. 34°, n_D^{20} 1.42418, n_D^{25} 1.42190, n_D^{20} 1.43057, n_D^{25} 1.43091. The alc. treated in 5-10- μ portions with dry HCl with cooling gave 85.5% $Me_3CC:CCMe_2Cl$ (I), bp 72°, n_D^{20} 1.43598, n_D^{25} 1.43323, n_D^{20} 1.44235, n_D^{25} 1.45194 [cf. Burch and Stove, (C.A. 10, 2727) for technique]. Et_2MgBr from 12 g. Mg, 65 g. Et_2Br , and 200 ml. Et_2O was treated over 4 hrs. with 41 g. $Me_3CC:CH$ in 50 ml. Et_2O with cooling and after 8 hrs. in the cold the mixt. was refluxed until C_2H_2 evolution ceased. The cooled Grignard reagent was then treated with 1 g. $CuCl_2$ and 1 g. $HgCl_2$ followed by 40 g. I added with cooling; after stirring 3 days the mixt. was treated with dil. HCl and the org. layer was sep'd. and distd. yielding 2 products: 20% $Cl_2C:CCMe_2CCMe_2$, bp 58°, d_4^{20} 0.7825, d_4^{25} 0.7682, n_D^{20} 1.43651, n_D^{25} 1.43400, n_D^{20} 1.44704, n_D^{25} 1.45097 [Raman spectrum: 149.1(3), 631.0(1), 600.7(1), 563.6(6), 919(2), 1290.1(3), 1376(1), 1444.4(5), 1627(10), 2202.9(10), 2015.0(1), 2987.3(1)] and 80% $Me_3CC:CCMe_2C:CCMe_2$, bp 82°, b. 74°, m. 46°, d_4^{20} 0.7492, n_D^{20} 1.41735, n_D^{25} 1.41109, n_D^{20} 1.42350, n_D^{25} 1.43293 [Raman spectrum in molten state: 139(2), 166.4(2), 445.5(0.5), 547.5(1), 608.9(1), 741.6(0.6), 880.5(3), 919.5(2), 1190.8(1), 1195.2(4), 2220.8(5)]. Ozonolysis of the latter gave Me_3CCO_2H , $Me_3C(CO_2H)_2$, and hydroxyisobutyric acid, m. 78°. Hydrogenation over Pd required 3 moles of H₂. The diyne was unattacked after 3 days with 1% KMnO₄. G. M. Kosolapoff

MARKHAROVA, A. I.

Synthesis of branched bicyclic hydrocarbons. Preparation of 2,2,5,5-tetramethyl-1,6-nonaene. (4)

by G. N. Murashov. J. Gen. Chem. U.S.S.R. 23, 2261 (1953) (Engl. translation). See C.A. 50,

1956, 11, 1754. B.M.R.



Synthesis of branched acetylenes by hydrocarbons
Prescription of 2,6,6-trimethyl-3,5-dimethyl-4-heptyna.
A. I. Zakharov and V. V. Chirkov (State Institute of
Chemistry, Kiev, 25, 28-31, 1961).
Solv. EtOH. Synth. EtOH 25, 28-31, 1961.
50, 11633. 1 dm. of 41 g. $\text{Me}_3\text{CC}(\text{CH}_3)_2$ and 57 g. Ko-
 Pr_2CO in 30 ml. Et_2O to a well stirred suspension of 143
g. powdered KOH in 200 ml. Et_2O at 0° for 0 hrs. gave, after an
hour, treatment on the following day, 75% $\text{Me}_3\text{CC}(\text{CH}_3)_2$
 $(\text{CH}_3)_2$, b.p. 75.5° d₄ 0.8530, d₄ 0.8334, n_D 1.44142,
n_D 1.48900, n_D 1.44743. This treated (in 5 g. portions)
with dry FeCl_3 gave a hydrocarbon, b.p. 57-54° described
below, and a branched hydrocarbon, b.p. 4-57°,
75.5° d₄ 0.8100, d₄ 0.5913, n_D 1.47637, which
was 2 g. and was isolated in 75% yield, heating over 2 hrs. to 100°

G. N. Kosalyga

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963610008-7

ZAKHAROVA, A. I.

USSR

synthesis of branched acetylenic hydrocarbons. Preparation of 2,2,3,3,6,6-hexamethyl-4-heptyne. A. I. Zakharova and G. M. Kosolapoff (Leningrad State Univ., Institute of Chemistry, 13, 1931-U(10-1)). In an ice-cooled mixture of 150 g. powder KOH and 250 ml. Et₄O was added over 6 hrs. 0.6 mole Me₂CC₂CH and 0.5 mole pyridine in 50 ml. Et₄O; after 15 hrs. the mixt. was hydrolyzed with cooling and the org. layer gave 60% 2,2,3,3,6,6-hexamethyl-4-heptyne-3-ol, m. 22°, b.p. 75°, d₄ 0.8301, n_D²⁰ 1.43742, n_D²⁰ 1.43495, n_D²⁰ 1.43225, n_D²⁰ 1.43810, δ 25.10. This (25 g.) in 5 g. portions was treated with dry HCl with cooling, yielding 80% 2,2,3,3,6,6-hexamethyl-3-chloro-4-heptyne(1), m.

52°, b.p. 82°, which hydrolyzed readily on shaking with aq. AgNO₃. 1 (50 g.) was added to MeMgBr from 50 g. Et₂Br in 150 ml. Et₄O, the addn. being made with ice-cooling, after which the mixture was set aside for 14 hrs., then refluxed 2 hrs., treated with dil. HCl and the org. layer distilled, yielding 55% 2,2,3,3,6,6-hexamethyl-4-heptyne, b.p. 48°, d₄ 0.7613, n_D²⁰ 1.43226, n_D²⁰ 1.43056, n_D²⁰ 1.43977, δ 28.16, d₄ 0.7613, n_D²⁰ 1.44523. Raman spectrum given. Ozonolysis gave CH₃O, Me₂CO, Me₂CO₂H, m. 182°, where the salt was analyzed, HCO₂H, Me₂CO₂H and Me₂CCMe₂CO₂H, a greenish oil whose abs. spectrum shows max. at 2830, 2980 and 3030 Å.

G. M. Kosolapoff

AUTHORS:

Zakharova, A. I., Efros, A. M.

SOV/79-28-12-17/41

TITLE:

On the Problem of the Cyano-Ethylation of Acetylene- γ -Glycols
(K voprosu tsianestilirovaniya atsetilenovykh γ -glikoley)

PERIODICAL:

Zhurnal obshchey khimii, 1958, Vol 28, Nr 12, pp 3243-3245
(USSR)

ABSTRACT:

Recently Efros (Ref 2) investigated the cyano-ethylation reaction in the series of benzimidazole in the presence of triethyl-benzyl ammonium hydroxide. It was interesting to use this catalyst also in the cyano-ethylation of unsaturated hydroxyl-containing compounds, especially of acetylene- γ -glycols. The authors, therefore, cyano-ethylated the tetramethyl and tetraphenyl butynediol in the presence of this catalyst. With the former this reaction takes place very easily on the addition of the double amount of acrylonitrile to the solution of glycol in dioxane under the formation of heat and slight resinification. After 24 hours standing at room temperature and pouring the reaction mixture into water crystals of tetramethyl butynediol ether are separated, which have a melting-point of 37-38° (yield 65%). The yield of the monocyno-ethyl ether of this glycol obtained

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On the Problem of the Cyano-Ethylation of
Acetylene - γ -Glycols

SOV/79-28-12-17/41

under the same conditions amounted only to 8-10%. Thus the above catalyst can also be used efficiently in the cyano-ethylation of tetramethyl butynediol, as this reaction takes place easier than that suggested by Nazarov and his cooperators (Ref 1), and the final product does not need tedious purification. The cyano-ethylation of tetraphenyl butynediol (I) carried out in the same was as mentioned above also takes place easily, but with a somewhat larger excess of acrylonitrile. The final product is the di-(β -cyano-ethyl)-ether of tetraphenyl butynediol (II), (melting-point 179-180°). Its yield amounted to 52.6%. From the reaction mass remaining the mono- β -cyano-ethyl ether of glycol (III) was obtained (melting point 68-69°) (yield 26.5%). Both of these ethers had been unknown before. There are 2 Soviet references.

ASSOCIATION: Leningradskiy sel'skokhozyaystvennyy institut (Leningrad Agricultural Institute)

Card 2/3

ZAKHAROVA, A. I.

PHASE I BOOK EXPLOITATION

SOV/4583

Leningrad. Universitet

Voprosy teorii stroyeniya organiceskikh soyedineniy (Problems in the Theory of the Structure of Organic Compounds) [Leningrad] 1960. 239 p. Errata slip inserted. 3,725 copies printed.

Sponsoring Agency: Leningradskiy ordena Lenina Gosudarstvennyy universitet im. A.A. Zhdanova.

Resp. Ed.: T.A. Favorskaya; Ed.: V.D. Piastro; Tech. Ed.: S.D. Vodolagina.

PURPOSE: This collection of articles is intended for chemists and organic chemists.

COVERAGE: The collection is concerned with the scientific legacy of A.Ye. Favorskiy, and includes discussions of his theoretical views and their evolution in connection with the development of theoretical organic chemistry. The articles review problems on the structure, reactivity and transformations of various classes of organic compounds: unsaturated acyclic and cyclic hydrocarbons, saturated and unsaturated alcohols, glycols and carbonyl compounds. No personalities are mentioned. References accompany each article.

Card 1/3

Problems in the Theory of the Structure (Cont.)

SOV/4583

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Danilov, S.N. Evolution of A.Ye. Favorskiy's Ideas on the Course of Chemical Reactions and Present-Day Understanding of the Mechanisms of Favorskiy Reactions

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Domnin, N.A., R.Ch. Kolinskiy, and V.A. Cherkasova. Development of A.Ye. Favorskiy's Work in the Field of Polymethylene Cycles 68

Lebedeva, A.I. Development of A.Ye. Favorskiy's Ideas on the Synthesis of Terpenes and Related Compounds by the Soviet School of Chemists 126

Yanovskaya, L.A., and V.F. Kucherov. Role of A.Ye. Favorskiy's Research on the Synthesis of Isoprenoid Compounds 135

Card 2/9

ACC NR: AR6035271

SOURCE CODE: UR/0169/86/000/009/G012/G012

AUTHOR: Zakharova, A. I.

TITLE: Some results of the study of the mechanism of earthquake foci in the Tashkent region

SOURCE: Ref. zh. Geofizika, Abs. 9G70

REF SOURCE: Sb. Geol. stratigr. i seismol. Uzbekistana. Tashkent, Nauka, 1966, 90-108

TOPIC TAGS: seismology, earthquake, seismic wave, earth crust

ABSTRACT: The mechanism of the focus of 11 earthquakes of the 9—14 intensity scale, has been determined in the area around Tashkent. Displacement signs in straight, head and refracted longitudinal waves were used for the above determination. In the case of nearby stations, the emission angles of seismic rays were calculated according to a model of the structure of the Earth's crust in the area around Tashkent. Errors in drawing of nodal lines did not exceed an average of $\pm 10-15$ degrees along the azimuth. The directions of compression and decompression stresses for most of the foci investigated, form small angles with the

Card 1/2

UDC: 550.341.4

ACC NR: AR6035271

horizon. Moreover, the decompression stresses are found to be oriented parallel, and the compression stresses, at a right angle to the Chatkala Mountain range. Possible planes of the fault are characterized by a fairly steep occurrence. Displacement shifts predominate in the north-eastern part of the region in the foci (10 earthquakes). Shifts in the direction of the fall of the fault planes have been determined in the case of the foci of two earthquakes investigated in the south-western part of the region. L. Balakhina. [Translation of abstract]

[GC]

SUB CODE: 08/

Card 2/2

DANILOV, S.N., glav. red.; ZAKHAROVA, A.I., red.; ARBUZOV, A.Ye.,
red.; VVEDENSKIY, A.A., red.; VENUS-DANILOVA, E.D., red.;
IOFFE, I.S., red.; KAVERZNEVA, Ye.D., red.; LUTSENKO,
I.F., red.; MISHCHENKO, K.P., red.; NEMTSEV, M.S., red.;
PETROV, A.A., red.; FREYDLINA, R.Kh., red.; SHIMYAKIN,
M.M., red.; SHCHUKAREV, S.A., red.; YUR'YEV, Yu.K., red.

[Problems of organic synthesis] Problemy organicheskogo
sinteza. Moskva, Nauka, 1965. 323 p. (MIRA 18:8)

BUTOVSKAYA, Ya.M.; ZAKHAROVA, A.I.; ATABAYEV, Kh.A.; FLENOV, Yu.P.

Results of the application of specific hodographs for the
determination of the epicenters of some regions in Central Asia.
Bul. Sov. po seism. no.15:101-111 '63. (MIRA 17:4)

ZAKHAROVA, A.I.

Specific hodographs based on earthquake data for the Tashkent area
and the central Chatkal Range. Trudy Inst. mat. AN Uz. SSR no.25:
147-160 '62. (MIRA 16:8)
(Tashkent region--Seismometry) (Chatkal Range--Seismometry)

S/167/62/000/004/002/002
D207/D308

AUTHOR:

Zakharova, A.I.

TITLE:

On the recurrent shocks following the Brich-
mulla earthquake on October 24, 1959

PERIODICAL:

Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya.
tekhnicheskikh nauk, no. 4, 1962, 77 - 81

TEXT:

A strong earthquake occurred at 23.40 hours GMT
on October 24, 1959, near the village of Brichmulla about 90 km
north-east of the city of Tashkent. The intensity of the earthquake
was I = 4 - 5 and its magnitude was M = 5.6. Further shocks were
recorded in the region of Brichmulla during the next 18 months. Nine
strong shocks (M > 3) were recorded from November 1959 to May 1960
by the regional seismic-station network. In May 1960 new sensitive
stations were established near Brichmulla and these stations record-
ed about 100 shocks of M > 3 up to October 1961. An analysis of 9
strong shocks and 26 weak ones is given by the author, the follow-

Card 1/2

On the recurrent shocks ...

S/167/62/000/004/002/002
D207/D3C8

ing items being tabulated: date, time of the shock at the focus, distance from the earthquake center, depth of the focus, energy class of the shock ($K = \log E$, where E is in Joules), stations which recorded the shock. The area over which these shocks occurred covers 350 km² including the Chatkalo-Kuraminskiye Ridges, consisting of paleozoic rocks, and the Tashkent-Golodnostenorskaya Submontane Depression filled with cainozoic deposits. The data indicate that about 16 months after the earthquake on October 24, 1959, the active area has reached seismic stability. ✓

ASSOCIATION: Institut matematiki im. V.V. Romanovskogo AN UzSSR
(Mathematics Institute imeni V.V. Romanovskiy, AS
UzSSR)

SUBMITTED: March 20, 1962

Card 2/2

ZAKHAROVA, A.I., inzh.

Graphitization of the metal of steampipes and cast components operating for long periods at electric power plants with high parameters. Teploenergetika 8 no.6:48-50 Je '61.

(MIRA 14:10)

1. Vsesoyuznyy teplotekhnicheskiy institut.
(Steam power plants) (Steam pipes)

ZAKHAROVA, A.I.

KRUPINA, T.N.; ZAKHAROVA, A.I.

Acute primary infectious nonsuppurative encephalomyelitis in
children [with summary in French]. Zhurn. nevr. i psich. 57 no.7:
836-841 '57. (MLRA 10:9)

1. Klinika nervnykh bolezney (rukoveditel' - prof. D.S. Futer)
II Moskovskogo meditsinskogo instituta imeni I.V. Stalina i datskaya
klinicheskaya bol'ница No.1 (glavnnyy vrach Ye.V. Prokhorovich)
(ENCEPHALOMYELITIS, in infant and child,
acute primary infect. nonsuppurative (Rus))

SYNTHETICA MEDICA Sec 7 Vol 13/8 Pediatrics Aug. 59

2164. THE CLINICAL PICTURE OF NERVOUS SYSTEM LESIONS DUE TO
ANTIRABIES INOCULATIONS IN CHILDREN (Russian text) - Zakharova
A. I. - ZH. NEVROPAT. I PSIKHIAT. 1958, 18/7 (801-805)

These nervous system lesions are diffuse. On the basis of 12 cases, 3 forms are distinguished, the syndromes of: meningo-encephalomyelitis; myelopolyradiculoneuritis; and Landry's paralysis. In children, the prognosis is favourable. The disease is attributed directly to the inoculations. Particular significance is attached to alteration of the neurotrophic functions in the patients. (L. 7, 8)

ZAKHAROVA, A.I.

Clinical aspects of affections of the nervous system in children
vaccinated against rabies [with summary in French]. Zhur.nevr.
i psich. 58 no.7:801-805 '58 (MIRA 11:7)

1. Detskaya klinicheskaya bol'nitsa No.1 (glavnyy vrach Ye.V.
Prokhorovich) i klinika ostrykh nervnykh infektsiy Gosudarstvennogo
pediatsricheskogo instituta RSFSR (zav. - prof. D.S. Futer).
(RABIES, prevention and control.
vacc. causing NS dis. in child. (Rus))
(VACCINES AND VACCINATION, compl.
rabies vaccine causing NS dis. in child. (Rus))
(NERVOUS SYSTEM. dis.
caused by rabies vacc. in child. (Rus))

ZAKHAROVA, A. I., Cand Med Sci (diss) -- "Hemoglobin iron in the blood serum of patients with chronic occupational intoxication". Kuybyshev, 1960. 12 pp (Kuybyshev State Med Inst), 250 copies (KL, No 15, 1960, 139)

DANILOV, S.N., glav. red.: ARBUZOV, A.Ye., red.; VVEDENSKIY, A.A., red.; VENUS-DANILOVA, E.D., red.; ZAKHAROVA, A.I., red.; IOFFE, I.S., red.; KAVERZNEVA, Ye.D., red.; LUTSENKO, I.F., red.; MISHCHENKO, K.P., red.; NENTSOV, M.S., red.; PETROV, A.A., red.; FREYDLINA, R.Kh., red.; SHENYAKIN, M.M., red.; SHUKAREV, S.A., red.; YUR'YEV, Yu.K., red.

[Biologically active compounds] Biologicheski aktivnye soedineniya. Moskva, Nauka, 1965. 305 p.
(MIRA 18:7)

ZAKHAROVA, A.I.; IL'INA, G.D.

Diacetylene hydrocarbons. Part 2: Preparation and hydrogenation
of 2,2,5,5-tetramethyl-3,6-octadiyne. Zhur. ob. khim. 34
no. 5:1389-1393 My '64. (MIA 17:7)

1. Leningradskiy sel'skokhozyaystvennyj institut.

BUTOVSKAYA, Ye.M.; ZAKHAROVA, A.I.; IODKO, V.K.; FLENOVA, N.G.;
FLENOV, Yu.P.; KYZHKOV, O.A., doktor geol.-miner. nauk,
otv. red.; SHAFEEYEVA, K.A., red.

[Seismicity of Uzbekistan] Seismichnost' Uzbekistana.
[By] E.M.Butovskaya i dr. Tashkent, Izd-vo "Nauka,"
UzSSR. No.2. [Tashkent and Yuzhnyy seismic regions, the
central part of the Chatkal Range] Pritashkentskii i
IUzhnyi seismicheskie raiony, tsentral'naia chast' Chatkal'-
skogo khrebeta. 1964. 121 p. (MIRA 17:6)

ZAKHAROVA, A.I.

Repeated earth shocks during the Brichmulla earthquake
of October 24, 1959. Izv.AN Uz.SSR. Ser.tekh.nauk no.4:77-81
'62. (MIR 15:7)

1. Institut matematiki imeni V.V. Romanovskogo AN UzSSR.
(Brichmulla—Earthquake, 1959)

ZAKHAROVA, A.I.

Map of seismic activity with an arbitrary zone of averaging.
Dokl. AN Uz.SSR. 21 no.3:43-47 '64.

(MIRA 19:1)

1. Institut geologii i geofiziki imeni Kh.M.Abdullayeva
AN UzSSR. Submitted July 24, 1963.

ASHBEL', S. I.; KHIL', R. G.; ZAKHAROVA, A. M. (Gor'kiy)

Disorders of the blood circulation in toxic pneumoscleroses. Gig.
truda i prof. zab. no.2:26-32 '62. (MIRA 15:2)

1. Gor'kovskiy institut gigiyeny truda i profbolezney.

(LUNGS--DISEASES)
(BLOOD CIRCULATION, DISORDERS OF)

ZAKHAROV, A.V.

14(10)

PHASE I BOOK EXPLOITATION

SOV/2276

Prochnost' tsilindricheskikh obolochek; sbornik statey (Strength of Cylindrical Shells; Collection of Articles) Moscow, Oborongiz, 1959. 157 p. Errata slip inserted. 2,400 copies printed.

Ed. (Title page): V.M. Darevskiy, Doctor of Physical and Mathematical Sciences; Ed.: S.I. Bumshteyn, Engineer; Ed. of Publishing House: A.P. Starykh; Tech. Ed.: V.I. Oreshkina; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for aircraft jet-engine designers and production engineers.

COVERAGE: This collection of nine articles covers problems of statics and dynamics of cylindrical shells which arise in the calculation of stability of jet-engine cases. Results of new theoretical and experimental investigations are included. No personalities are mentioned. References follow some of the articles.

TABLE OF CONTENTS:

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Foreword

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Strength of Cylindrical Shells (Cont.)

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Zakharova, A.P. Calculation of a Circular Cylindrical Cantilever Shell Loaded at the Free End by Uniformly Distributed Transverse Forces

5

The above problem is representative of jet-engine cases subject to stresses and deformations due to forces of inertia of the rotor in nonlinear flights. In the general case the safety coefficient and the clearance must be determined. The article is primarily concerned with stresses and deformations.

Zakharova, A.P. Flexure of a Cylindrical Cantilever Shell Reinforced With a Rigid Radially Loaded Ring

43

The cylinder is reinforced with a rigid ring at its free end. The force is applied along one of the diameters of the ring. The problem is similar to the problem described in the first article and was treated analogously. Displacements due to flexure differ but little from displacements determined in the first article, and the category of the displacement is nearly momentless.

Kshnyakin, R.I. Influence of an Axial Tensile Force on the Stability of Cylindrical Shells Subject to Flexure and Normal External Normal Pressure

55

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Strength of Cylindrical Shells (Cont.)

SOV/2276

According to the author the simultaneous action of an axial tensile stress and external pressure has not been thoroughly analyzed. He considers a thin, circular, closed shell under torsion. Other loads produce a momentless stressed state. The expressions of stresses and deformations are given.

Darevskiy, V.M. Stability of Circular Cylindrical Shells Under Flexure by a Transverse Force Combined With Torsion and Internal Pressure

72

In this article, the results of the author's former work are used to simplify the evaluation of the stability of cylindrical shells under the simultaneous action of torsional moments, internal pressure and transverse rim forces. The author describes conditions under which the evaluation of the stability of the shell may be determined by simple formulas. The above analysis is applicable to the calculation of combustion chambers of jet engines.

Darevskiy, V.M., and S.N. Kukudzhanov. Stability of Orthotropic Shells Under Torsion and Normal Pressure

95

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Strength of Cylindrical Shells (Cont.)

SOV/2276

The authors establish basic equations for the determination of stresses, moments and deformations, and then analyze separately cases of the uniform transverse compression, torsion, and torsion with pressure. The established formulas are valid only within the limits of elastic deformations.

Kukudzhanov, S.N. Stability of an Orthotropic Cylindrical Shell Under External Transverse Pressure With Axial Tension and Torsion With Axial Tension 109

In this article, results obtained for an isotropic shell by R.I. Kshnyakin are generalized for orthotropic shells. In order to establish final formulas, the author considers the stability of cylindrical orthotropic shells under outer transverse pressure with axial tension, and the stability of cylindrical orthotropic shells under torsion with axial tension.

Serdyukov, V.V. Stability of Anisotropic Cylindrical Shells Under Certain Loads 118

The author considers the stability of anisotropic cylindrical shells under the action of outer pressure, torsion and simultaneous action of torsion and normal pressure. Stability is studied on the basis of more complete equations than those estab-

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Strength of Cylindrical Shells (Cont.)

SOV/2276

lished by Kh.M. Mushtari in his theory of thin shells (1938). The established formulas provide a method for determining critical stresses under simultaneous torsion and normal pressure.

Nikulin, M.V. Influence of Axial Stresses on the Frequency of Natural Vibrations of Cylindrical Shells 131
The author is concerned with natural vibrations of near-cylindrical shells, due to the dynamic action of an unbalanced rotor or to gas-dynamic impulses. In both cases the determination of natural vibrations of the system is important. The influence of axial stresses on the vibration frequency is considered, generally speaking, as independent of pressure. Formulas and graphical representations are given.

Nikulin, M.V. Natural Vibrations of Cylindrical Shells Prestressed by Torsional Moments 146
This article is a continuation of the preceding article. The author reduces three differential equations of vibration to one differential equation of radial displacement. Thus an

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Strength of Cylindrical Shells (Cont.)

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algebraic equation of the third order is obtained for determining of the square of the frequency without solving the third order. The boundary conditions are considered in detail.

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Card 6/6

IS/bg
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L 12880-66 EWT(d)/EWT(e)/EWP(w)/EWP(v)/EWP(k)/EWA(h)/ETC(m) IJP(c) NW/EM
ACC NR: AT6001261 SOURCE CODE: UR/0000/65/000/000/0036/0051

AUTHOR: Zakharova, A. P.

ORG: none

TITLE: Designing for flexure a cantilever cylindrical shell reinforced by an elastic ring

SOURCE: Prochnost' i dinamika aviationsionnykh dvigateley (Durability and dynamics of aircraft engines); sbornik statey, no. 2, Moscow, Izd-vo "Mashinostroyeniye," 1965, 36-51

TOPIC TAGS: thin shell, cylindrical shell, cantilever cylindrical shell, shell flexure, shell bending, stiffened shell, reinforced shell, ring reinforced cylindrical shell

ABSTRACT: The flexure of a cantilever thin-walled hollow cylinder fixed at one end and reinforced at the free end by an elastic ring is analyzed. This shell-ring system is acted upon by lateral forces uniformly distributed along the axis of the middle surface of the ring. The deformations of the shell and of the ring are analyzed separately, applying to the latter the theory of thin curvilinear bars. The constants contained in the solution are determined from boundary conditions of the shell at the fixed end, and of its junction with the stiffening ring. The latter boundary conditions are based on the joint deformation at the end of a plain shell

UDC: 539.384:62-215.001.24

Card 1/2

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ACC NR: AT6001261

and of the ring, assuming a rigid connection between them and relating their deformations to their middle surfaces. The expressions for determining the constants contain rigidity parameters which account for the effects of the flexure, torsion, and tension exerted by the external load; by equating some of these parameters either to zero or to infinity, one can obtain the constants either for a plain cantilever shell or a shell reinforced by a perfectly rigid ring. The distribution of forces, moments, and deflections along the axis of the shell was calculated for plain and ring-reinforced cantilever cylindrical shells with various nondimensional geometric parameters and the results are plotted in diagrams showing the effect of rigidity of the reinforcing ring on the longitudinal distribution of these quantities. Orig. art. has: 7 figures and 29 formulas. [VK]

SUB CODE: 20/ SUBM DATE: 17Jul65/ ORIG REF: 003/ ATD PRESS: 4/83

Card 2/2 HW

MINSKER, K.S.; CHERNOVSKAYA, R.P.; ZAKHAROVA, A.S.

Kinetics and mechanism of propylene polymerization in the presence
of styrene on the α -TiCl₃ + AlR₃ system. Vysokom. soed. 5
no.11:1627-1631 N '63. (MIRA 17:1)

1. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom
gosudarstvennom universitete imeni N.I.Lobachevskogo.

(A) L 12915-66 EWT(m)/T DJ

ACC NR: AP6000960

SOURCE CODE: UR/0286/65/000/022/0042/0043

AUTHORS: Rapoport, I. B., ⁴⁴ Moshkin, P. A., ⁴⁴ Belizar'yeva, N. I., ⁴⁴ Ivanova, Ye. A., ⁴⁴
Zakharova, A. S.

ORG: none

TITLE: A method for obtaining synthetic lubricating oils. Class 23, No. 176350

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1965, 42-43

TOPIC TAGS: lubricant, ester, carbon, synthetic material

ABSTRACT: This Author Certificate presents a method for obtaining synthetic lubricating oils representing esters of two-base acids. A mixture of two-base acids with the number of carbon atoms exceeding 11 is used as the two-base acids. The carbon atoms are obtained from the C₁₇—C₂₀ fraction of synthetic fatty acids.

SUB CODE: 11/ SUBM DATE: 08Feb64

Card 1/1 HW

UDC: 665.582

GOL'DBERG, V.V.; ZAKHAROVA, A.T. (Riga)

Report on the activities of the Latvian Urological Society in 1958.
Urologija 24 no.4:78 Jl-Ag '59. (MIRA 12:12)
(LATVIA--UROLOGICAL SOCIETIES)

ZAKHAROVA, A. V.

PROCESSES AND PROPERTIES INDEX

380 AND 414 CARDS

ca

117

Age modification of the amino acid content of muscle protein. A. V. Zakharenko. *Byull. Akad. Nauk. SSSR*, No. 17, 1944, 17, No. 1/2, 63-6 (1944).—Cystine and tryptophane content did not show any age variation in rat muscle protein matter (specimens up to 2.5 yrs. of age). G. M. K.

ASB-SEA METALLURGICAL LITERATURE CLASSIFICATION

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APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001963610008-7"

ZAKHAROVA, A. V.

ca

11F

Action of diisopropyl fluorophosphate on glycolysis in muscle tissue. A. V. Zakharova and V. I. Rozenhart. Biokhimiya 14, 67-9 (1970); cf. Webb, C.A. 42, 4624i. Incubation of rabbit muscle with diisopropyl fluorophosphate (DFP) leads to a decrease in lactic acid formation. Even in a concn. of 0.001 M/l., DFP lowers the glycolytic activity of the tissue to 20-40% of the normal value. NaF in 0.001 M soln. also powerfully retards glycolysis. But the action of DFP is not due to the formation of inorg. F by hydrolysis. NaF completely checks the formation of lactic acid from hexose diphosphate added to tissue, whereas DFP is without effect. As is known, the glycolytic process stops at the stage of 2-phosphoglyceric acid when NaF is present. Since hexose diphosphate is a much earlier intermediate, it cannot serve as a source of lactic acid in the presence of NaF. But DFP does not prevent the transformation of hexose diphosphate into lactic acid, and hence is without effect on all the later stages of the glycolytic process. The retarding action of DFP on glycolysis is concn. on the initial stages leading up to the formation of hexose diphosphate.

H. Priestley

Lab. Biochem., A-41 Sanitary & Chem. Inst., Leningrad

ASH-SEA METALLURGICAL LITERATURE CLASSIFICATION

CLASSIFICATION SHEET

GENERAL SUBJECT		SUBJECT		SUBJECT		SUBJECT	
140000	1	1	2	3	4	5	6
		140000	140000	140000	140000	140000	140000

ZAKHAROVA, A. V., ROMANCHUK, L. A., RUBINA, KH. M., GEFTER, YU. M.,
and DORBRINSKAYA, M. A. (USSR)

"The Changes in Tissue Metabolism during Hypoxia and Therapeutic
Effects."

Report presented at the 5th International Biochemistry Congress,
Moscow, 10-16 Aug 1961

ZAKHAROVA, A.V.; TYURLIKOVA, I.P.

Reparative regeneration of the skeletal muscle tissue during the administration of ascorbic acid and vitamin P preparations. Arkh. anat. i embr. 46 no.4:69-74 Ap '64.

(MIRA 18:5)

1. Kafedra biokhimii (zav. - prof. Yu.M.Gefter) i kafedra obshchey biologii (zav. - prof. G.M.Litver) 1-go leningradskogo meditsinskogo instituta imeni akademika Pavlova. Adres avtorov: Leningrad, ul. L'va Tolstogo, 6/8; kafedra obshchey biologii i kafedra biokhimii I leningradskogo meditsinskogo instituta imeni akademika Pavlova.

KORYAKIN, V.I.; SOKOLOVA, A.I.; Prinimali uchastiye; VODOLAZOV, P.N;
Zabolotskiy, M.V.; ZAKHAROVA, A.V.; KLINSKIKH, Ye.V.

Dry distillation of wood as a potential source of furfural.
Gidroliz.i lesokhim.prom. 13 no.5:3-6 '60. (MIRA 13:7)

1. Tsentral'nyy nauchno-issledovatel'skiy lesokhimicheskoy institut.
(Furaldehyde) (Wood distillation)

ZAKHAROVA, A.V.

Effect of vitamins on glycolysis in muscle homogenates. Vop.med.
khim. 4:237-241 '52. (MIRA 11:4)

1. Kafedra biokhimii I Leningradskogo meditsinskogo instituta
im. I.P.Pavlova.
(VITAMINS) (GLYCOLYSIS) (MUSCLE)

TYURLIKOVA, L.P. (Leningrad, Mokhovaya ul., 30 kv. 22); ZAKHAROVA, A.V.

Some features of posttraumatic muscle tissue under the administration of adenosine-triphosphoric acid. Arkh.anat.gist.i embr. 39 no.9:53-58 S '60. (MIR14:1)

1. Kafedra biologii (zav. - prof. G.M. Litver) i kafedra biokhimii (zav. - prof. Yu.M. Gefter) I Leningradskogo meditsinskogo instituta imeni akademika I.P. Pavlova.

(MUSCLES) (REGENERARION (BIOLOGY))

ZAKHAROVA, A.V.; TYURLIKOVA, L.P.; TKACHENKO, A.V.

Content of nucleic acids, ascorbic acid and some phosphorus
compounds in guinea pigs during the reparative regeneration
of skeletal muscles. Vop. med. khim. 7 no.6:608-614 N-D '61.
(MIRA 15:3)

1. Chairs of Biology and Biochemistry, "Academician I.P.
Pavlov" First Medical Institute, Leningrad.
(MUSCLE) (NUCLEIC ACIDS)
(ASCORBIC ACID) (PHOSPHORUS COMPOUNDS)

MURIN, A.N.; LEVSKIY, L.K.; ZAKHAROVA, A.Ye.

Production of stable isotopes of krypton and xenon by irradiation
of aluminum halides in a reactor. Atom. energ. 19 no.5:458-459
N '65. (MIRA 18:12)

FEDOSYUK, L.G.; STARKOV, S.P.; ZAKHAROVA, D.K.; BATURINA, Ye.N.

Sec. pentylphenols. Met. poluch. khim. reak. i prepar.
no.6:89-91 '62. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
reaktivov i ssobo chistykh khimicheskikh veshchestv, Donetskiy
filial.

STARKOV, S.P.; FEDOSYUK, L.G.; ZAKHAROVA, D.K.; BATURINA, Ye.N.

Ion exchange resins as catalysts in organic synthesis. Part 1:
Alkylation of phenol with a mixture of n-alkylenes in the presence
of the cation exchanger KU-2. Zhur.ob.khim. 33 no.7:2237-2238
J1 '63. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh
reaktivov i osobo chistiykh khimicheskikh veshchestv, Donetskiy
filial.

(Phenols) (Alkylation) (Ion exchange resins)

ZAKHAROVA, B. P.

VOLPYANSKIY, I.M.; GORSHKOV, A.A., doktor tekhnicheskikh nauk, retsenzent;
ZHAROV, N.T., doktor tekhnicheskikh nauk, retsenzent; ZAKHAROVA, B.P.
inzhener, redaktor; DUGINA, I.A., tekhnicheskiy redaktor

[Casting iron in metallic molds] Chmugunnoe lit'e v metallicheskie
formy. Pod red. B.P.Zakharova. Moskva, Gos. nauchno-tekhn. izd-vo
mashinostroit. lit-ry, 1954. 52 p. (Nauchno-populiarnaya biblioteka
rabochego-litelishchika, no.8) [Microfilm] (MLRA 8:2)
(Iron founding)

RESHETNIKOVA, L.P.; NOVOSELOVA, A.V.; ZAKHAROVA, B.S.

Solubility of $(\text{NH}_4)_2\text{BeF}_2$ in solutions of propyl and butyl alcohols. Vest. Mosk. un. Ser. 2 Khim. 19 no. 2:30-32 Mr-Ap'64
(MIRA 17:6)

1. Kafedra neorganicheskoy khimii Moskovskogo universiteta.

L 28709-65 EWT(m)/T/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AT5004079

S/3127/63/000/05-/0102/0104

AUTHOR: Katayev, G. A.; Zakharova, E. A.; Oleynik, L. I.

TITLE: Determination of microimpurities of copper and lead in arsenic and gallium arsenide

SOURCE: USSR. Gosudarstvennyy komitet po khimii. Metody analiza khimicheskikh reaktsionnykh preparatov. no. 5/6. 1963. Poliograficheskoye opredeleniye ul'tramikropolosleduyushchim rastvoreniyem (Polarographic determination of ultramicroimpurities with their accumulation on stationary mercury or solid electrodes and subsequent dissolution), 102-104

TOPIC TAGS: copper determination, lead determination, arsenic analysis, gallium arsenide, polarography

ABSTRACT: The article describes methods for analyzing arsenic and gallium arsenide of high purity. Since As (V) and Ga (III) are not reduced on a mercury drop in alkaline media, the authors used salts of arsenic acid obtained after dissolving arsenic samples in concentrated nitric and hydrochloric acid and neutralizing the solution obtained with alkali. With potassium biarsenate as the supporting electrolyte, copper and lead give

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L 28709-65

ACCESSION NR: AT6004079

distinct polarographic troughs. Two copper troughs and a lead trough were obtained in the analysis of gallium arsenide (with K_3AsO_4 + $GaAsO_4$ as the base electrolyte). It was found that an increase in the pH of the solution causes a shift in the potentials of the peaks to the more negative region. The dependence of the trough depth of copper and lead on their concentration was linear (in the investigated range of 1×10^{-7} to 5×10^{-7} M). The apparatus and procedure employed are described. In the analysis of gallium the maximum sensitivity of the method was 2×10^{-9} for lead and 4×10^{-9} for copper. In the analysis of gallium arsenide, the sensitivity was 1.4×10^{-8} for lead and 1.2×10^{-8} for copper. The results of the analysis agreed satisfactorily with those obtained by a spectral method. Orig. art. has: 2 figures.

ASSOCIATION: TPI

SUBMITTED: 00Jul62 ENCL: 00

SUB CODE: IC

NO REF Sov: 003

OTHER: 002

Card 2/3

L 34115-66 ENT(m)/EWP(j)/T MM/MM/WE/RM
ACC NR: AP6008837

SOURCE CODE: UR/0294/66/004/001/0147/0148

34

5

AUTHOR: Golovin, V. S.; Kol'chugin, B. A.; Zakharova, E. A.

ORG: Power Institute im. G. M. Krzizhanovskiy (Energeticheskiy institut)

TITLE: Measurement of the rate of growth of vapor bubbles during the boiling of various liquids

SOURCE: Teplofizika vysokikh temperatur, v. 4; no. 1, 1966, 147-148

TOPIC TAGS: boiling benzene, ethyl alcohol, water, vaporization, gas bubble

ABSTRACT: The authors obtained data on the rate of growth of vapor bubbles on the heat-transfer surface during the boiling of benzene, ethyl alcohol, and water for different thermal loads and saturation pressures in an experimental set-up described elsewhere (D. A. Labuntsov, B. A. Kol'chugin, V. S. Golovin, E. A. Zakharova, L. N. Vladimirova. Teplofizika vysokikh temperature, 2, No. 3, 446, 1964). The experiments were performed with strips of silver and nickel-plated copper, using the methods of the earlier work. The results of the primary processing of motion picture data showed that, for all the cases investigated, the relationship $R \sim \tau^{\frac{1}{3}}$ (where R is the vapor bubble radius, τ is the time of its growth on the boiling surface) is revealed quite distinctly. This made it possible to calculate the values $R/\tau^{\frac{1}{3}}$, which are tabulated for various liquids and mode parameters. These data, together with the results of the earlier work, obtained during the boiling of water on a silver strip are shown in a diagram. The new data confirm the fundamental conclusions of the earlier work. Orig. art. has: 1 figure, 1 table, and 1 formula.

UDC 536.423.1

Card 1/2

"APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001963610008-7

L 34115-66

ACC NR: AP6008837

SUB CODE: 07 / SUBM DATE: 19May65 / ORIG REF: 001

Card 2/2 (b)

APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001963610008-7"

L 31310-65 EXT(n)/EVA(d)/EMP(t)/ENE(b) IJF(c) JD/WB
ACCESSION NR: AR5003885

S/0081/64/000/018/G017/G017

SOURCE: Ref. zh. Khimiya, Abs. 18G125

27

AUTHOR: Katayev, G. A.; Zakhrova, E. A.; Oleynik, L. I.

27

TITLE: Amalgam polarographic method for the determination of trace impurities in arsenic and gallium arsenide

27

CITED SOURCE: Tr. Tomskogo un-ta, v. 157, 1963, 261-264

TOPIC TAGS: polarographic analysis, electrolysis, chemical analysis, arsenic, gallium arsenide

TRANSLATION: The amalgam polarographic method using preconcentration into a mercury drop, produced by electrolysis of $Hg_2(NO_3)_2$ on Pt wire (30 ml, 90 sec), was used for determining Cu and Pb trace impurities in arsenic and gallium arsenide. 0.5 g of As was ground in an agate mortar, placed into a 25 ml quartz beaker, 5 ml of concentrated HNO_3 were added and the contents were heated in an air bath ($115^\circ C$) to complete dissolution of As and evaporation of the excess acid. To the dry residue 0.74 g of KOH and 10 ml of water were added. After dissolution the contents were transferred into an electrolyzer, the beaker was flushed (total volume of

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ACCESSION NR: AR5003885

solution ~ 20 ml) and preliminary electrolysis was conducted for 30 min at -1.0 (with respect to SCE) and 30 sec after turning off the stirrer the dissolution curve of the amalgam was taken up to +0.4 v. After this the Hg drop is changed and determination of Pb and Cu is conducted by the standard addition method. For Pb $E_{1/2}$ is -0.39v and for Cu it is +0.03 v. The analysis requires 3 hours and the error is 15-20%. The smallest concentration of Pb determined is $3 \cdot 10^{-8}$ mole/l (0.155%) and of Cu $3 \cdot 10^{-8}$ mole/l ($2 \cdot 10^{-6} \%$). Equal amounts of Fe, Zn, Bi and gallium arsenide, 1.7 g ($1.7 \cdot 10^{-3}$ mole) do not interfere with the analysis of Pb. After dissolution of the amalgam and removal of excess acid, 1.5 g KOH are added along with 20 ml of water and the analyses are carried out as before. KOH are added along with 20 ml of water and the analyses are carried out as before. The minimum concentration of Pb $E_{1/2}$ is -0.16 and 0.27 v for Cu and -0.69 v for Pb. The minimum concentration of Pb $E_{1/2}$ is $6 \cdot 10^{-8}$ mole/l ($1.5 \cdot 10^{-5} \%$), and of Pb $-2 \cdot 10^{-8}$ mole/l (0.155%). It was determined that Fe, Zn, Bi and Ga do not interfere with determination of Pb as do large amounts of the other elements.

Card 2/2

LABUNTSOV, D.A., doktor tekhn. nauk; KOL'CHUGIN, B.A., inzh.; ZAKHAROVA,
E.A., inzh.

Local vapor contents in the surface boiling of an underheated liquid
in channels. Teploenergetika 12 no.4,73-76 Ap '65. (MIRA 18:5)

ACCESSION NR: AP4042471

S/0294/64/002/003/0446/0453

AUTHORS: Labuntsov, D. A.; Kol'chugin, B. A.; Golovin, V. S.; Zakharova, E. A.
Vladimirova, L. N.TITLE: The study of bubble growth during boiling of saturated water under wide
pressure range by means of high speed motion pictures

SOURCE: Teplofizika vysokikh temperatur, v. 2, no. 3, 1964, 446-453

TOPIC TAGS: vapor bubble, boiling water, motion picture, wetting angle, water
saturation pressure, motion picture camera SKS IMABSTRACT: The growth of vapor bubbles from boiling water in a pressure range
1 to 100 bars and 40 to 150 kvolt/m² heat supply was studied by high-speed motion
pictures. The light source was a SVDSh-1000 mercury lamp and the SKS-IM camera
was a 1000-to-4000 frame/second instrument. Analysis of bubble growth rate shows
a functional dependence between bubble radius R and time T : $R/\sqrt{\alpha t} = \sqrt{2\beta N}$,where β - numerical coefficient $\beta = 2 \left(\cos \frac{\theta}{2} \right) \ln \frac{\Delta}{y_A} [(1 + \cos \theta)^2 (2 - \cos \theta)]^{-1}$,

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ACCESSION NR: AP4042471

and $N = c\rho \Delta T / r\rho''$ (nondimensional parameter). The experiments were performed in two steps; first, from 1-30 bars, and second, 1-100 bars. Under given conditions of pressure and heat-flow rate, the average growth rate for the bubble followed the rule $R \sim \tau^{\frac{1}{2}}$, decreasing sharply by increasing the pressure. In general, the results showed excellent agreement with the theoretical prediction above, with a mean value for $\beta = 6$. The wetting contact angle ϕ was also investigated experimentally as a function of the water saturation pressure. The results show a minimum value for $\phi = 30^\circ$ under a saturation pressure of 15 bars. Orig. art. has: 7 formulas, 3 figures, and 1 table.

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo (Institute of Heat Power)

SUBMITTED: 01Feb64

ENCL: 00

SUB CODE: ME,TD

NO REF Sov: 007

OTHER: 017

Card 2/2

SHUL'MAN, S.S.; BERENIUS, Yu.N.; ZAKHAROVA, E.A.

Parasites of local schools of some fishes in Lake Syamozero.
Trudy Kar.fil,AN SSSR no.14:47-71 '59. (MIRA 15:12)
(Syamozero, Lake—Parasites—Fishes)

STROMBERG, A.C.; ZAKHAROVA, E.A.

Polarography with accumulation on stationary electrodes (review).
Zav.lab. 30 no.3:261-267 '64. (MIRA 17:4)

KATAYEV, G.A.; ZAKHAROVA, E.A.

Determination of ultramicroimpurities of copper and lead in
high-purity arsenic by the method of amalgam polarography on
a stationary mercury drop. Zav.lab. 29 no.5:524-526 '63.
(MIRA 16:5)

1. Tomskiy gosudarstvennyy universitet.
(Copper—Analysis) (Lead—Analysis) (Arsenic—Analysis)

L 11411-63
AFFTC/ASD

EWP(q)/EWT(m)/BDS

S/032/63/029/005/003/022

JD

AUTHOR: Katayev, G.A. and Zakharova, E.A.

55

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TITLE: The determination of ultramicroquantities of copper and lead impurities in high-purity arsenic utilizing amalgam polarography on a stationary mercury drop

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 5, 1963, 524-526

TEXT: The method described was worked out to determine ultramicroquantities of impurities in high-purity arsenic used in some semiconductors. The base electrolyte was 0.07M solution of acid calcium arsenate. The analysis took about 3 hours. The mean error was 15-20%. The maximum sensitivity of determination is 2×10^{-5} % Pb and 8×10^{-6} % Cu. There are 2 tables and 3 figures.

ASSOCIATION: Tomskiy gosudarstvennyy universitet (Tomsk State University)

lm/ ja
Card 1/1

KATAYEV, G.A.; ZAKHAROVA, E.A.; OLEYNIK, L.I.

Determination of copper and lead microimpurities in arsenic and
gallium arsenide. Metod. anal. khim. reak. i prepar. no.5/6;102-
104 '63. (MIRA 17:9)

1. Tomskiy politekhnicheskiy institut.

STROMBERG, A.G.; ZAKHAROVA, E.A.

Diffusion coefficients of metals in mercury. Part 1: New method
for determining diffusion coefficients from the decay with time
of the anodic limiting current on a hanging mercury drop.
Elektrokhimiia 1 no.9:1035-1043 3 '65. (MIRA 18:0)

1. Tomskiy politekhnicheskiy institut i Tomskiy gosudarstvennyy
universitet.

L-07559-67 EWT(1) IJP(c) JGS/WW/GD
ACC NR: AT6029317

SOURCE CODE: UR/0000/66/000/000/0156/0166

AUTHOR: Labunstov, D. A.; Kol'chugin, B. A.; Golovin, V. S.; Zakharova, Z. A.;
Vladimirova, L. N.

ORG: none

69

B71

TITLE: Investigation of the mechanism of the nucleate boiling of water using high speed moving picture photography

SOURCE: Moscow. Energeticheskiy institut. Teploobmen v elementakh energeticheskikh ustanovok (Heat exchange in power installation units). Moscow, Izd-vo Nauka, 1966, 156-166

TOPIC TAGS: nucleate boiling, high speed photography, heat transfer coefficient

ABSTRACT: The experiments were carried out on a Z-shaped silver plate. The specific heat loads in the experiments varied from 40×10^3 to 150×10^3 watts/m², and the pressure from 1 to 100 bars. The article describes the results of an investigation of the following characteristics of the boiling mechanism: the magnitudes of the bubble densities on the heating surfaces, the values of the breakaway diameters, the macroscopic boundary angles, and the average frequency and rate of growth of the bubbles on the boiling surface. The experimental apparatus consisted of a vertical cylindrical vessel with a removable cover and a condenser. The experimental section

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ACC NR: AT6029317

was a 99.99% silver plate bent at a right angle, having a thickness of 0.2 mm and a width of 2 mm, and placed on its wide edge. The load on the plate was created by a low voltage direct current. Before the experiments, the surface was given a special preparatory treatment, after which it had a cleanliness of Class 8b, GOST 2789-51. The working fluid was distilled water with a salt content of 0.2-0.5 grams/m³. Two series of experiments were made; one on freshly prepared surfaces and the other on surfaces which had been used. The experimental heat transfer data are shown in a table. The following conclusions were drawn: 1) the values of the heat transfer coefficients for surfaces which had been used were lower than those for freshly prepared surfaces; 2) there was observed a sharp decrease in the breakaway diameter with an increase in pressure; 3) the rate of growth of the bubbles slowed down sharply with an increase in pressure; 4) the average macroscopic boundary angles changed only slightly with an increase in pressure. Orig. art. has: 17 formulas, 11 figures and 1 table.

SUB CODE: 20/ SUEM DATE: 05Apr66/ ORIG REF: 010/ OTH REF: 013

14/

Card 2/2 nst

SOV/78-3-12-11/36

AUTHORS: Essen, L. N., Zakharova, F. A., Gel'man, A. D.

TITLE: Concerning the Synthesis of Isomers With Six Different Addenda
(K sintezu i somerov s shest'yu razlichnymi zamestitelyami)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 12,
pp 2654-2661 (USSR)

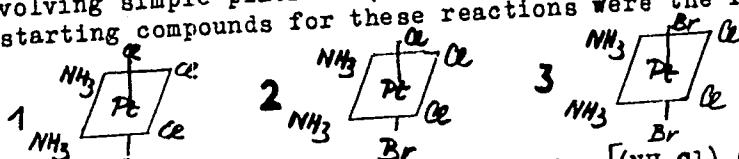
ABSTRACT: $[\text{PyNH}_3\text{BrNO}_2\text{ClJPt}]$ and $[\text{PyClNH}_3\text{NO}_2\text{BrJPt}]$, two geometric isomers with six different addenda, were synthesized. The starting material for the synthesis of the trans isomers was $[\text{PyNH}_3\text{BrNO}_2\text{Pt}]$, containing divalent platinum. The compound was first treated with NaNO_2 , then with chlorine, and finally converted to the trans form $[\text{PyNH}_3\text{BrNO}_2\text{ClJPt}]$ by treating with potassium iodide. This product has a dark green color, and has a solubility in water of 0.05 grams per 100 grams solution. A decomposition with the generation of iodine takes place at 200° when it is heated in open capillary tubes. The synthesis of the cis isomer $[\text{PyClNH}_3\text{NO}_2\text{BrJPt}]$ was carried out using the salt

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$K[\text{PtPyCl}_3]$. At 40-60°C in aqueous solution the NO_2 group containing an equivalent amount of sodium nitrite was added to the salt. The compound was then oxidized with bromine and the produced salt converted to the cis isomer with six addenda by reaction with potassium iodide. The cis isomer is a fine crystalline powder with a dark brown color, and melts without decomposition at 200°C. It has a solubility in water at 25° of 0.095 grams per 100 grams solution. The syntheses of isomers with two, three, and eight addenda were not successful, because the addition of the NO_2 group to the tetravalent platinum compound is extremely complicated. A few exchange reactions involving simple platinum (IV) compounds were carried out. The starting compounds for these reactions were the following:



By reacting potassium bromide with the $[(\text{NH}_3\text{Cl})_2\text{Cl}_2\text{Pt}]$ salt in the ratio 1:1 the displacement of one chlorine in the co-

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ordinates Cl-Pt-Cl takes place. By reacting 2 moles of KBr with one mole of $[(\text{NH}_3\text{Cl})_2\text{Cl}_2\text{Pt}]$ an exchange of the two chlorine atoms with bromine takes place under development of $[(\text{NH}_3\text{Cl})_2\text{Br}_2\text{Pt}]$. The bromine ion in the coordinates Br-Pt-Br could not be displaced by reaction with KCl. The experimental results show that chlorine and bromine have different coordination affinities in the inner spheres of tetravalent platinum compounds. An exchange of chlorine and bromine with the NO_2 group in the coordinates Br-Pt-Br, Br-Pt-Cl, and Cl-Pt-Cl did not occur. The course of the exchange reactions in the inner spheres of tetravalent platinum compounds is dependent upon the various coordination mobilities of the addenda. There are 11 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

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SOV/78-3-12-11/36

Concerning the Synthesis of Isomers With Six Different Addenda

SUBMITTED: August 5, 1957

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